



Department of Energy

Oak Ridge Office
P.O. Box 2001
Oak Ridge, Tennessee 37831

June 14, 2012

Multiple Addressees

TRANSMITTAL OF THE FINAL MEMORANDUM OF AGREEMENT FOR HISTORICAL PROPERTIES AT EAST TENNESSEE TECHNOLOGY PARK

Enclosed please find a copy of the Final Memorandum of Agreement (MOA) for the interpretation of historical properties at East Tennessee Technology Park (ETTP). This MOA was prepared pursuant to 36 CFR 800.6 and is being sent to you for signature. Also enclosed are the Final Mitigation Plan and Execution Plan, which provide additional information on the consultation process leading to the MOA, and cost and schedule expectations for MOA implementation. Signature of the MOA is requested by July 13, 2012. Please return your signature/concurrence sheets as soon as possible and provide copies to all signatory and concurring parties so that they will have complete documents. If you choose not to concur please notify David Adler by e-mail (adlerdg@oro.doe.gov) as soon as possible.

Mitigation measures included in this MOA are the result of extensive consultation, including the last consulting parties meeting, held May 17, 2012, as suggested by the Advisory Council on Historic Preservation (ACHP). This meeting afforded the opportunity to discuss recent preservation recommendations from the National Park Service, our newest consulting party. During the meeting, the ACHP sought confirmation from the National Park Service on the acceptability of using a scale replica to display the K-25 building's uranium enrichment technology. The National Park Service has now confirmed in their letter dated June 7, 2012, that this approach is acceptable. Input from consulting parties and other interested members of the public participating in the process over the years is also reflected in the MOA.

The consultation process has clearly enhanced and informed our plans to interpret and commemorate the history of ETTP. I would like to thank all involved with this important effort.

If you have any questions concerning this matter, please feel free to contact me at (865) 576-0742 or David Adler at (865) 576-4049.

Sincerely,

A handwritten signature in black ink, reading "A. M. Cange", is positioned above the typed name.

Susan M. Cange, Acting Manager
Oak Ridge Office of Environmental Management

Enclosure

cc's on page 2

**TRANSMITTAL OF THE FINAL MEMORANDUM OF AGREEMENT FOR HISTORICAL
PROPERTIES AT EAST TENNESSEE TECHNOLOGY PARK**

cc w/enclosure:

Terry Fehner, MA-75, Germantown

David Huizenga, EM-1, FORS

Tracy Mustin, EM-2, FORS

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DOE Information Center

**TRANSMITTAL OF THE FINAL MEMORANDUM OF AGREEMENT FOR HISTORICAL
PROPERTIES AT THE EAST TENNESSEE TECHNOLOGY PARK**

List of Addressees

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**TRANSMITTAL OF THE FINAL MEMORANDUM OF AGREEMENT FOR HISTORICAL
PROPERTIES AT THE EAST TENNESSEE TECHNOLOGY PARK**

List of Addressees (cont.)

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**TRANSMITTAL OF THE FINAL MEMORANDUM OF AGREEMENT FOR HISTORICAL
PROPERTIES AT THE EAST TENNESSEE TECHNOLOGY PARK**

List of Addressees (cont.)

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**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
RIDGE, TENNESSEE, AND THE EAST TENNESSEE PRESERVATION ALLIANCE
PURSUANT TO 36 *CFR* PART 800.6(b)(2) REGARDING SITE INTERPRETATION OF
THE EAST TENNESSEE TECHNOLOGY PARK,
ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

WHEREAS the purpose of this Memorandum of Agreement (MOA) is to enable the Department of Energy (DOE) to continue and complete its undertaking involving historic properties located at the East Tennessee Technology Park (ETTP), formerly known as the Oak Ridge K-25 Site, in compliance with the National Historic Preservation Act (NHPA), (Pub. L. 89-665, as amended; 16 U.S.C. §470 *et seq.*), and

WHEREAS, the undertaking consists of decontamination, decommissioning and demolition (hereafter referred to as “D&D”) of historic properties in furtherance of DOE’s overall responsibilities to complete the environmental restoration of the ETTP, and

WHEREAS the consulting parties to this MOA pursuant to 36 *CFR* Part 800.6(c)(3) are the U.S. Department of Energy (DOE); Tennessee State Historic Preservation Officer (Tennessee SHPO); Advisory Council on Historic Preservation (ACHP); City of Oak Ridge (COR); East Tennessee Preservation Alliance (ETPA); Atomic Heritage Foundation (AHF); National Trust for Historic Preservation (NTHP); Oak Ridge Heritage and Preservation Association/Partnership for K-25 Preservation (ORHPA/PKP); Oak Ridge Site-Specific Advisory Board (ORSSAB); Community Reuse Organization of East Tennessee (CROET); and Department of the Interior, National Park Service (NPS), and

WHEREAS the signatories to this MOA pursuant to 36 *CFR* Part 800.6(c)(1) are the DOE, Tennessee SHPO, and the ACHP, and

WHEREAS the invited signatories to this MOA pursuant to 36 *CFR* 800.6 (c)(2) are the COR and the ETPA, and

WHEREAS, DOE has executed MOAs for undertakings at ETTP that have involved adverse effects to historic properties (both terms as defined in 36 *CFR* 800.16) that include the following: 1998 MOA for the K-29, K-31 and K-33 Buildings; 2003 MOA on the K-25 and K-27 Buildings; 2004 MOA on 108 Buildings at the ETTP; 2005 MOA on ETTP Site Interpretation; and the 2010 “Bridge” MOA on ETTP Site Interpretation, and

WHEREAS, the DOE Federal Preservation Officer (DOE FPO) coordinates historic preservation activities for the U.S. Department of Energy (DOE), has fully participated in consultations involving ETTP, and has signed both the 2005 MOA and the 2010 Bridge MOA, and

WHEREAS in 2005 the DOE, the Tennessee SHPO, and the ACHP executed a Memorandum of Agreement (hereinafter “2005 MOA”) regarding Site Interpretation of the ETTP, and pursuant to

the MOA has performed the following mitigative measures: collected and stored over 700 artifacts from throughout ETTP; sponsored a study to evaluate the feasibility of retaining the low chimneys of the S-50 Plant; sponsored over 70 oral history interviews with former K-25 workers and completed transcriptions for over 85 hours of interviews; sponsored two professional documentary videos utilizing the oral history interview and historic photographs; sponsored 12 Oak Ridge history videos designed to be used by public schools teachers; sponsored the thorough documentation of the K-25 and K-27 Buildings through the completion of 360° interior IpiX photographs; compiled and stored a complete set of all unclassified architectural and engineering plans and specifications of the K-25 and K-27 Buildings, and

WHEREAS, Stipulations 1, 3, and 6, respectively, of the 2005 MOA called for DOE to preserve the North End Tower of the K-25 Building, retain the upper 10 feet of the interior walls in the legs of the “U,” and salvage and preserve portions of the Roosevelt Cell, and

WHEREAS, by DOE’s letter of June 9, 2009, DOE notified the signatory and consulting parties (Tennessee SHPO, ACHP, COR and ORHPA/PKP) to the 2005 MOA of its conclusion that stipulations 1, 3, and 6 of the 2005 MOA could not be achieved due to the significantly deteriorated condition of the K-25 Building and resulting worker safety issues, and the Tennessee SHPO concurred with this notification by letter of October 26, 2009, and

WHEREAS, in 2010 the DOE, the Tennessee SHPO, and the ACHP executed the Bridge MOA regarding Site Interpretation of ETTP, and

WHEREAS, pursuant to the Bridge MOA, DOE commissioned feasibility studies to assist in evaluating mitigation alternatives for interpreting the significant historic roles played by the K-25 Building, and

WHEREAS, the results of the studies were presented in two reports entitled *K-25 Historical Preservation Alternatives: Draft Structural Evaluation* by Degenkolb Engineers and *Feasibility of Interpretation of the Manhattan Project, Oak Ridge, Tennessee* by Informal Learning Experiences, Inc., and

WHEREAS, DOE provided the draft feasibility studies to all consulting parties to the Bridge MOA for 30 days to review and comment; prepared a Preferred Mitigation Plan; held a meeting of the consulting parties on November 17, 2011; considered all comments in the preparation of a proposed Final Memorandum of Agreement and proposed Final Mitigation Plan (including attachments consisting of an Execution Plan, cost estimates and proposed implementation schedules), which were released for review and comment on February 1, 2012, and

WHEREAS, the ACHP requested that the NPS, acting on behalf of the Secretary of the Interior, prepare a report pursuant to Section 213 of the National Historic Preservation Act (Pub. L. 89-665, as amended; 16 U.S.C. §470u.), and

WHEREAS, DOE obtained the Section 213 Report from the NPS on March 31, 2012 and has taken the recommendations of the report into consideration, and

WHEREAS, after receipt of the Section 213 report from the NPS, DOE received further comments from the ACHP recommending that DOE hold an additional consultation meeting to discuss the NPS Section 213 Report, and

WHEREAS, DOE accepted the recommendation of the ACHP and held a meeting of the consulting parties on May 17, 2012; invited the NPS to participate as a consulting party; considered all comments proffered at the meeting; made a number of modifications to the proposed mitigation measures in response to those comments, and included the revised measures as Stipulations in this Memorandum of Agreement, and

WHEREAS, the DOE enters into this MOA under the authority of section 646 of the Department of Energy Organization Act (Pub. L. 95-91, as amended; 42 U.S.C. § 7256), and the National Historic Preservation Act (Pub. L. 89-665, as amended; 16 U.S.C. §470 *et seq.*), and

WHEREAS, this MOA is subject to, and will be carried out in compliance with, all applicable laws, regulations and other legal requirements.

NOW THEREFORE, in order to satisfy the DOE's National Historic Preservation Act Section 106 responsibilities DOE, Tennessee SHPO, ACHP, COR and ETPA agree upon execution of this MOA and upon the decision by DOE to proceed with all D&D activities at ETTP during which DOE shall ensure that the following stipulations are implemented.

STIPULATIONS

DOE shall undertake the following:

1. Shall formally dedicate all of the area located inside the road that currently surrounds the K-25 Building, hereafter referred to as the "K-25 Preservation Footprint," for commemoration and interpretation activities, exclusive of DOE-mission essential facilities and land (e.g., K-1600). Formal dedication of the K-25 Preservation Footprint will occur coincident with the public opening of the Equipment Building (Stipulation 4), Viewing Tower (Stipulation 5), or the History Center (Stipulation 8), whichever occurs first. Unless related to the historic preservation activities contemplated herein, no future development of the K-25 Preservation Footprint will take place. Easements necessary or appropriate to allow adjacent site reuse will be allowed so long as there is no resulting interference with the K-25 Preservation Footprint viewscape. Any future deed of transfer executed for land that includes any or all parts of the K-25 Preservation Footprint shall include deed covenants that restrict the K-25 Preservation Footprint's uses to commemoration and interpretation. While the road surrounding the K-25 Preservation Footprint may be used for commemoration and interpretation activities, it may be used for other purposes as well.
2. Shall evaluate retention of the concrete slab under the K-25 Building as follows: DOE shall retain the slab during D&D, and, no later than three (3) months after completion of D&D of the K-25 Building, DOE will initiate an investigation to determine the contamination levels on and beneath the slab as well as the short- and long-term costs associated with leaving, covering, or removing the slab. If these investigations, estimated to take one (1) year from

initiation, conclude that the slab can be safely and cost effectively left in place and exposed for public access, the slab will be integrated into the comprehensive design solution for the interpretation of the K-25 Preservation Footprint. Regardless of whether or not the slab is left in place for public access, the area occupied by the slab shall be delineated to illustrate the original dimensions of the K-25 building.

3. Shall procure a professional site design team, with experience interpreting historic sites, to prepare a design solution for the K-25 Preservation Footprint. Procurement of the professional site design team will be initiated no later than three (3) months after execution of this MOA. The selected professional site design team will:
 - a. Recommend an approach for delineating the unique “U” shape of the K-25 gaseous diffusion process building, where practicable using materials salvaged from ETTP;
 - b. Design a facility (“Equipment Building”) for the display of authentic process gas equipment (Stipulation 4);
 - c. Design and site a viewing tower (“Viewing Tower”) for site observation (Stipulation 5);
 - d. Design and recommend the placement of the low-profile NPS standard-type wayside exhibits (Stipulation 10).
4. Shall construct an Equipment Building (“Equipment Building”) that will be built to achieve the height of the K-25 Building, with three stories and a basement and recreate a scale representation of the gaseous diffusion technology contained within the K-25 Building, making the maximum use of available authentic equipment. The objective is to display and configure authentic equipment in a manner that is most representative of operational conditions. The Equipment Building will display authentic equipment consisting of two Size 2 cells, representative operating floor equipment, and Cold War-era equipment consisting of a 0, 00, and 000 converter and axial compressors with motors, and one 40-ft centrifuge casing, which, to the extent possible, will be declassified and decontaminated to enable display. The Equipment Building will be enclosed and will be of a size sufficient to provide space for ingress, egress, miscellaneous storage, viewing and interpretation of the equipment and its informational materials, and will take into consideration the potential for expansion and the relationship of the structure to the Fire Station, where additional authentic artifacts, oral histories, and other displays will be featured. DOE will work towards a schedule that will enable the Equipment Building to be open to the public no later than four (4) years after execution of this MOA.
5. Shall design and construct a dedicated viewing tower (“Viewing Tower”). The design team (Stipulation 3) will suggest the best location and orientation of the tower, which will be proximate to the History Center (Stipulation 8), and have a height adequate to provide a view of the size, scale, and proportions of the K-25 building footprint. DOE will work towards a schedule that will enable the Viewing Tower to be open to the public within four (4) years of execution of this MOA.

6. Shall obtain the services of a museum professional to design and layout the interior spaces to be used to interpret the Manhattan Project and Cold War history of the K-25 Site. Procurement of the museum professional will be initiated within one (1) year of execution of this MOA. The museum professional shall have experience in the interpretation of technological history and artifacts and will:
 - a. Design the exhibits and displays for the Equipment Building (Stipulation 4);
 - b. Design the exhibits and displays for the K-25 History Center (Stipulation 8);
 - c. Develop the content of the 12 NPS standard-type wayside exhibits (Stipulation 10); and
 - d. Develop the historic information content of the self-guided tour brochure (Stipulation 11).
7. Shall perform an inventory and review of all equipment identified for preservation in prior MOAs for the ETTP site, which will include the equipment and materials collected to date and those not yet collected. The inventory and review will be conducted by a team that includes a museum professional, a historian who meets the Secretary of the Interior's Historic Preservation Professional Standards, a photographer, subject matter experts with information about the history and use of particular artifacts, and a DOE representative. Based on the inventory and review, DOE will determine the most appropriate and feasible equipment and artifacts to display in the Equipment Building (Stipulation 4) and in the K-25 History Center (Stipulation 8) and possibly elsewhere. The completed inventory listing, which will identify the items to be retained, will be provided to the SHPO and ACHP. Equipment and materials selected for retention by DOE will be set aside and prepared for display according to a schedule that will enable their timely relocation to either the Equipment Building or History Center once the facility is available to receive the items. Equipment and artifacts not selected for retention and/or display may be offered to third parties, both Federal and non-Federal, such as the NPS, the Smithsonian, or others for use in their museum collections, consistent with 41 *CFR* § 109 *et seq.* The American Museum of Science and Energy is considered a third party for purposes of the excess equipment and artifacts.
8. Shall initiate discussions with the COR regarding the K-25 History Center to be located on the second level of the Fire Station at ETTP. Discussions would include, but not be limited to, the lease arrangements, timing on availability of the space, additional space that may be available for expansion, and the coordination of History Center operations with Fire Station activities and responsibilities. The History Center will provide space to exhibit authentic equipment, artifacts, and other media to facilitate access to oral histories, film and video, and access to the K-25 Virtual Museum (Stipulation 9).
9. Shall sponsor the development and maintenance of a web-based K-25 Virtual Museum. Procurement for the K-25 Virtual Museum development services will be initiated no later than 6 months after execution of this MOA. An outline of proposed features will be prepared no later than three (3) months after procurement. Updates on the progress of the K-25 Virtual Museum development, including details on the hosting and maintenance of the Virtual Museum, will be provided in the semi-annual status reports to be prepared by

the K-25 Historic Preservation Coordinator (Stipulation 15). A preview of the K-25 Virtual Museum will be offered to the consulting parties no later than eighteen (18) months after procurement, and the formal launch of the K-25 Virtual Museum will occur no later than six (6) months after the preview, so long as, for both preview and launch, any necessary security, classification and/or cyber-security reviews of the K-25 Virtual Museum materials have been completed. The K-25 Virtual Museum will include multi-media opportunities for viewing, learning, and researching aspects of the K-25 site and its Manhattan Project and Cold War history. The K-25 Virtual Museum will use an interactive map of the site where a viewer can click on a building or area that will open up to a menu of information types. Menu types will include, but not be limited to photographs (archival and recent), oral histories, drawings and plans, videos, and descriptive materials of the buildings' purposes and functions. Additionally, users will be able to make their own contributions to the archive through a Digital Memory Box (DMB) that will use electronic multimedia to collect, preserve, and present the stories and digital records of former workers and their families. The DMB will contribute to the ongoing effort by DOE to preserve K-25's history by collecting first-hand accounts, on-scene images, and blog postings. Information from the Center for Oak Ridge Oral History (COROH) will also be available to the Virtual Museum, whose DMB feature will enable oral history collection efforts to continue after the funding for the COROH has been expended.

10. Shall sponsor the preparation, design, installation, and maintenance of 12 low-profile NPS standard-type wayside exhibits, to be used in coordination with a self-guided tour brochure (Stipulation 11). Wayside exhibits will be designed using the NPS "*Wayside Exhibit Guide*," October 2009. The K-25 Historic Preservation Coordinator will work with the museum professional (Stipulation 6) on the written and pictorial content of the exhibits. Installation of the wayside exhibits will be coordinated with the implementation of the design for the dedicated K-25 Preservation Footprint. Installation of all of the wayside exhibits will be coordinated to enable them to occur no later than one (1) year after the opening of the History Center. The bricks from the S-50 Boiler House Chimneys may also be able to be used to facilitate historic interpretation in displays, markers, or for other applications, where appropriate.
11. Shall, no later than one (1) year after the opening of the History Center, prepare and publish 1000 copies of a self-guided tour brochure for ETTP and its immediate surroundings. The brochure, which will supplement the wayside exhibits described in Stipulation 10, will include a map of the site area, photographs of the site over time, a map of the wayside exhibit locations, and other points of interest, such as the site of the K-25 Building, History Center, Viewing Tower, and the Equipment Building.
12. Intends to provide a grant upon execution of this MOA to East Tennessee Preservation Alliance (ETPA) or its fiscal agent, Knox Heritage, Inc., for purchase and stabilization of the Alexander Inn (also known as the Guest House), as partial mitigation for the adverse effects of the decontamination, decommissioning and demolition of the K-25 Building at the ETTP site. The purpose of the grant is to support the preservation of the Alexander Inn and to transition the Alexander Inn to a private developer for economic benefit to the community, and to offset the loss of historic properties at ETTP by preserving similarly

situated historic properties in Oak Ridge. The DOE intends to provide \$350,000 for purchase of the property, and an additional \$150,000 for building stabilization activity. The terms of the grant shall include, among other things, that within 180 days of receipt of the grant, ETPA will finalize the purchase or other acquisition of the Alexander Inn by ETPA, Knox Heritage or by a private owner. The grant funds may be used to acquire the Alexander Inn, including payment of any closing costs related thereto, or for acquisition and foreclosure of the first mortgage on the property. The sale of the Alexander Inn to private ownership or end user shall include or require a historic preservation easement for the external building to protect the historic and cultural values of the building. The Secretary of the Interior Standards for Rehabilitation of Historic Buildings will be followed for the rehabilitation. The City of Oak Ridge agrees to work with ETPA and the private owner in developing an acceptable schedule, not to exceed 365 days from date of purchase, for bringing the Alexander Inn into compliance with all city ordinances. In the event the ETPA is unable to finalize the purchase and sale of the Alexander Inn in the agreed upon amount of time or any extended period approved by DOE, the grant will be terminated and all monies refunded in full to DOE (less any funds paid for allowable costs incurred under the grant).

13. Shall work with the NPS to prepare Level I Historic Documentation including a written description and history, archival-quality photographs, historic photographs and drawings developed to meet the requirements of the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation for the entire K-25 Building (including what has already been demolished), the K-1037 Building and K-1028-54 (Portal 4). Coordination with the NPS on the documentation for the K-25 Building will begin as soon as is practicable after execution of this MOA, with coordination on the K-1037 and K-1028-54 Buildings beginning no later than eighteen (18) months after execution of this MOA. Reasonable substitutes for documentation that meet the intent, if not necessarily the specific Historic American Engineering Record (HAER) standards, may be incorporated in this effort, with the agreement of the HAER representatives. Alternate methods of information gathering may be employed in consideration of the known physical, radiological and/or biological hazards, or classification concerns, that may exist within the remaining portions of the K-25 and K-1037 buildings.
14. Shall furnish a reference list of its available unclassified documents on the K-25 Building activities post-World War II and will research its inventory of classified documents to be considered for potential future declassification. However, DOE cannot warrant or otherwise guarantee any classified document on its reference list will be declassified. The reference list will be provided no later than one (1) year after execution of the MOA. After consultation with representatives of HAER on the reference list of unclassified post-World War II K-25 documents, DOE will provide electronic copies of mutually agreed-upon, unclassified documents to HAER.
15. Shall appoint a K-25 Historic Preservation Coordinator within three (3) months after execution of this MOA and, no later than three months after appointment, shall notify the SHPO and ACHP to document the appointment and to identify the appointee. The Coordinator will be responsible for implementing the Stipulations in this MOA according

to the Execution Plan and schedule appended to this MOA and will have access to both Secretary of the Interior qualified personnel and to senior DOE personnel with decision-making and commitment authority in carrying out the responsibilities of the position.

16. Monitoring Progress: Twice per year, beginning six (6) months after execution of this MOA and every six months thereafter until all stipulations have been completed, the K-25 Historic Preservation Coordinator will prepare a progress report for the signatory parties. Copies of the report will be available to the public. The report will summarize all work accomplished during the reporting period and identify concerns with future efforts. At the completion of all stipulations, the K-25 Historic Preservation Coordinator will submit a final report to all signatory parties.
17. Shall obtain the assistance of the ORHPA, including PKP and the City of Oak Ridge Historian, to help assure that implementation of the MOA is technically and historically accurate. ORHPA/PKP and the City of Oak Ridge Historian have unique and demonstrated knowledge of K-25 Plant history. Upon request by DOE, ORHPA will provide support during the design/build process on activities such as: a) Reviewing and commenting on the design, equipment layout, exhibits, and interpretation proposed for the Equipment Building and the K-25 History Center; b) providing information to the K-25 History Center museum professional on the selection, display, and interpretation of diffusion equipment, artifacts, timelines, models, photos and other items for presentation; c) collaborating in developing wayside markers the self-guided tour brochure and similar interpretive measures; and d) providing other support as requested by DOE.
18. Funding: The K-25 Historic Preservation Coordinator will continue to develop scopes of work and estimated costs for the mitigation stipulations. DOE shall submit on an annual basis, through established channels, appropriate budget requests to the Director of the Office of Management and Budget that adequately address agreed-upon schedules for implementation of this MOA. The stipulations identified in the MOA shall be recognized by DOE as measures necessary to comply with the National Historic Preservation Act. The completion of all stipulations contained in this MOA and their implementation pursuant to the schedule in the Execution Plan appended to this MOA are subject to annual Congressional appropriations. This MOA does not obligate or commit Federal funds, and does not serve as the basis for the transfer of Federal funds. Nothing in this MOA shall be construed as implying that the Congress will, at a later date, appropriate funds sufficient to meet deficiencies. No provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341.
19. Amendments: Any signatory to this MOA may propose to the other signatories that it be amended, whereupon the signatories will consult in accordance with 36 *CFR* Part 800.6(c)(7) to consider such amendments. This MOA may be modified by mutually acceptable written amendment, duly executed by authorized officials.
20. Dispute Resolution: Should any signatory to this MOA object to any action carried out or proposed by DOE with respect to the implementation of this MOA, that signatory shall communicate their objection to the DOE K-25 Historic Preservation Coordinator, and DOE

ORO shall consult with the signatory party to resolve the objection. If, after such consultation DOE determines that the objection cannot be resolved, DOE shall forward documentation relevant to the objection to the ACHP, including the DOE proposed response to the objection. Within forty-five (45) days after receipt of all pertinent documentation, the ACHP shall exercise one of the following options:

1. Advise DOE that the ACHP concurs in DOE's proposed final decision, whereupon DOE shall respond accordingly;
2. Provide DOE with recommendations, which DOE shall take into account in reaching a final decision regarding its response to the objection; or
3. Notify DOE that the objection will be referred to the ACHP's membership for formal comment and proceed to refer the objection and comment within forty-five (45) days. The resulting comment shall be taken into account by DOE in accordance with 36 *CFR* Part 800.7(c)(4).

Should the ACHP not exercise one of the above options within forty-five (45) days after receipt of all pertinent documentation, DOE may assume the ACHP's concurrence in its proposed response to the objections. DOE shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection; DOE must continue to carry out all actions under this MOA that are not the subject of the objections. To the extent that this MOA contains a schedule commitment(s) that is the subject of the objection(s), the commitment(s) shall be delayed by the period of time taken to resolve the dispute under this clause.

21. Termination:

1. If DOE determines that it cannot implement the terms of this MOA, or any of the other signatory parties determines the MOA is not being properly implemented, DOE or the objecting party may propose to the other parties to this MOA that it be terminated.
2. The party proposing to terminate this MOA shall notify all consulting parties to this MOA explaining the reasons for termination and affording them at least 30 days to consult and seek alternatives to termination.
3. Should such consultation fail and the MOA be terminated, DOE shall either consult in accordance with 36 *CFR* 800.6(a) to develop a new MOA or request the comments of the ACHP pursuant to 36 *CFR* 800.7(c).
4. If the undertaking covered by this MOA is not implemented by the end of fiscal year 2027, the signatory parties shall reconsider the terms of this MOA.

Execution of this Agreement Document and implementation of its terms serve as evidence that DOE has afforded the consulting parties a reasonable opportunity to comment on the measures

proposed to address the adverse effects resulting from D&D at ETTP. The stipulations in this MOA identify the full extent of the mitigative measures DOE will take to interpret the ETTP. This MOA constitutes the entire agreement between the signatory and consulting parties and supersedes previous MOAs and/or other understandings relative to the matters that are the subject of this MOA. This MOA is effective once all of the signatories and invited signatories have signed the MOA. This MOA is limited to the instant undertaking and is entered into solely for that purpose. This MOA in no way restricts any consulting party from participating in any activity with other public or private agencies, organizations, or individuals. This final MOA does not create any right or benefit, substantive or procedural, enforceable by law or equity, by persons who are not a party to this final MOA against the signatory parties, their officers, or employees or any person not a signatory or party to this final MOA. This final MOA shall not be interpreted as limited, superseding, or otherwise affecting DOE's normal operations or decisions in carrying out its statutory or regulatory duties.

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
RIDGE, TENNESSEE, AND THE EAST TENNESSEE PRESERVATION ALLIANCE
PURSUANT TO 36 *CFR* PART 800.6(b)(2) REGARDING SITE INTERPRETATION OF
THE EAST TENNESSEE TECHNOLOGY PARK,
ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

SIGNATORY:

DEPARTMENT OF ENERGY, OAK RIDGE OFFICE OF ENVIRONMENTAL
MANAGEMENT

By: _____ Date: _____
Agency Official for Purposes of Section 106
Acting Manager, Oak Ridge Office of Environmental Management

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
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ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

DEPARTMENT OF ENERGY, FEDERAL PRESERVATION OFFICER

By: _____ Date: _____
Federal Preservation Officer

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
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SIGNATORY:

TENNESSEE STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: _____
State Historic Preservation Officer

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
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ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

SIGNATORY:

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: _____
Executive Director

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
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INVITED SIGNATORY:

CITY OF OAK RIDGE

By: _____ Date: _____
Mayor

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
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THE EAST TENNESSEE TECHNOLOGY PARK,
ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

INVITED SIGNATORY:

EAST TENNESSEE PRESERVATION ALLIANCE

By:_____ Date:_____
Director of Preservation Field Services

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
RIDGE, TENNESSEE, AND THE EAST TENNESSEE PRESERVATION ALLIANCE
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THE EAST TENNESSEE TECHNOLOGY PARK,
ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

CONCURRING PARTY:

ATOMIC HERITAGE FOUNDATION

By:_____ Date:_____

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
RIDGE, TENNESSEE, AND THE EAST TENNESSEE PRESERVATION ALLIANCE
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CONCURRING PARTY:

NATIONAL TRUST FOR HISTORIC PRESERVATION

By:_____ Date:_____

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
RIDGE, TENNESSEE, AND THE EAST TENNESSEE PRESERVATION ALLIANCE
PURSUANT TO 36 *CFR* PART 800.6(b)(2) REGARDING SITE INTERPRETATION OF
THE EAST TENNESSEE TECHNOLOGY PARK,
ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

CONCURRING PARTY:

OAK RIDGE HERITAGE AND PRESERVATION ASSOCIATION

By: _____ Date: _____

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
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THE EAST TENNESSEE TECHNOLOGY PARK,
ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

CONCURRING PARTY:

OAK RIDGE SITE-SPECIFIC ADVISORY BOARD

By:_____ Date:_____

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
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CONCURRING PARTY:

COMMUNITY REUSE ORGANIZATION OF EAST TENNESSEE

By: _____ Date: _____

**MEMORANDUM OF AGREEMENT AMONG
THE U.S. DEPARTMENT OF ENERGY,
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CITY OF OAK
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ON THE OAK RIDGE RESERVATION, ROANE COUNTY, TENNESSEE**

CONCURRING PARTY:

DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE

By: _____ Date: _____

FINAL MITIGATION PLAN

SITE INTERPRETATION
EAST TENNESSEE TECHNOLOGY PARK

DEPARTMENT OF ENERGY
OAK RIDGE OFFICE
OFFICE OF ENVIRONMENTAL
MANAGEMENT

June 2012

PREFACE

The citizens of Oak Ridge are heirs to an important historical legacy. Founded during World War II, the city was created in an effort to rapidly develop new technologies needed to preserve American democracy. Working under intense pressure, thousands of men and women built—then operated—some of the largest and most sophisticated facilities ever constructed. Their contributions to winning the greatest war in human history are part of a story that more than six decades later still defines the character of the Oak Ridge community.

One of the story's most important chapters took place at K-25, a 2 million square foot facility that in 1945 was the largest building in the world. Using a new gaseous diffusion process to separate Uranium-235, an isotope suited for achieving nuclear fission, from Uranium-238, the "K-25 site" became the name associated with a vast complex of some 500 buildings constructed for the purpose of uranium enrichment at a cost that today would exceed \$6 billion. Employing more than 12,000 workers at its peak, the project's enormous scale was necessary to produce only a few grams of U-235. The small amount, however, was enough to help end the war with Japan and make Oak Ridge synonymous with the great achievements of American history.

After some four decades of producing enriched uranium for the American nuclear industry, the K-25 gaseous diffusion complex was closed in 1987. Unfortunately, several of the buildings contained significant contamination, a byproduct of housing radioactive materials that, at least in the early years, were sometimes not fully understood. For these buildings, which included the original K-25 structure, the enormous cost of remediating the contamination effectively foreclosed options for preservation or renovation. Supported by the Congress, the U.S. Department of Energy (DOE) determined in 1996 that risks to public health and the region's environment made it necessary to demolish the K-25 complex and remove the contaminated materials. The K-25 complex in 1997 was renamed the East Tennessee Technology Park, designed as a brownfield site suitable for reindustrialization after completion of environmental remediation.

The decision to demolish the buildings in the former K-25 Site was accompanied by a commitment to recognize for posterity the historic contributions represented by the site and by the thousands of workers who contributed to its success. This commitment was shared by a number of consulting parties, including, but not limited to, DOE, the City of Oak Ridge, the State of Tennessee, the Advisory Council on Historic Preservation, and the East Tennessee Preservation Alliance (ETPA). While all of the consulting parties shared the goal of commemorating K-25's historic legacy, each originally brought to the consultation process a distinctly different perspective. Not surprisingly, these unique perspectives produced recommendations that varied greatly in scale, cost, and the approach to preserving K-25's history. Some recommendations were projects confined to the K-25 Site. Within this group were proposals to retain substantial portions of existing buildings, along with options to build an interpretive center on the site of the existing K-25 Building. Other consulting parties sought to link the commemoration of K-25 to the broader story of Oak Ridge's role in the Manhattan Project, an effort that would include the preservation or construction of buildings not located on the K-25 Site. As advocated and embraced by the consulting parties in the past, the broader

history of the Manhattan Project in Oak Ridge may be best interpreted using a “hub and spoke” approach. This approach would link the stories of each of the DOE facilities in a thorough and appropriately balanced interpretive effort. The Department will work on this effort with other DOE programs in Oak Ridge, as well as the National Park Service, American Museum of Science and Energy and other consulting parties.

In response to a request from the Advisory Council on Historic Preservation to prepare a National Historic Preservation Act “Section 213 Report”, the National Park Service submitted their Section 213 Report in late March 2012. The Park Service recommended three interpretive options that both echoed and enhanced earlier proposals that had been made. Two options proposed saving portions of the K-25 Building itself, while a third option proposed a recreation of a portion of the K-25 Building. The Park Service also recommended several documentation efforts to further support the historic record. Correspondence followed from the Advisory Council on Historic Preservation who suggested that DOE hold a meeting of the consulting parties to enable a discussion of the Park Service Section 213 Report.

DOE held a final meeting of all of the consulting parties and the National Park Service on May 17, 2012. The meeting enabled an open discussion of the Park Service Report among all of the consulting parties in attendance. While the focus of the meeting was to discuss and gain a greater understanding of the preservation options from the informed opinion of the Park Service, the need for necessary haste in concluding the consultation was also provided by DOE. DOE confirmed that they had funding set aside to initiate a number of preservation measures within the 2012 fiscal year. DOE also pointed out that further delays in reaching an agreement risked the loss of those funds for preservation measures in the fiscal year as well as the even greater financial, regulatory, contracting, and personnel impacts that would ensue without an executed MOA.

All of the recommendations received to date have been evaluated and considered and have contributed to this June 2012 Memorandum of Agreement and Final Mitigation Plan. For over a decade, the collective input resulted in a process of rethinking both the goals and strategies for commemorating the K-25 Site and its contribution to our history. Against the backdrop of this input, the Final Mitigation Plan represents an effort to align these priorities with national financial constraints. A sustained effort to restrain federal spending means that proposals that only 7 years ago appeared viable today have little chance of obtaining funding. In this context, previous agreements were weighed against the need to acknowledge this new fiscal environment and the June 2012 MOA reflects the present fiscal limitations.

The Final Memorandum of Agreement and Mitigation Plan reflect DOE’s commitment to begin immediate implementation of a project to pass on the K-25 legacy to our children. If we tell it well, the story is one that will introduce them to our history, and connect them to our country and our achievements.

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1.0 INTRODUCTION

The Final Mitigation Plan for Site Interpretation of the East Tennessee Technology Park (ETTP) is the product of the Bridge Memorandum of Agreement (MOA) executed in 2010 by the U.S. Department of Energy's Oak Ridge Office (DOE ORO). Signatories to the 2010 agreement included the Department of Energy Federal Preservation Officer, the Tennessee State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation (ACHP). The agreement stipulated that DOE prepare a Final Mitigation Plan for interpretation of the history of the former K-25 complex, a component of the Manhattan Project located in the ETTP.

The Final Mitigation Plan incorporates extensive comment from a variety of stakeholders interested in the historic preservation of K-25. A draft plan, along with a MOA directing the plan's implementation, was circulated to consulting parties for review. DOE hosted an all-day consulting parties meeting on November 17, 2011, at which attendees were encouraged to share questions and comments about the draft plan. Additional written comments were accepted through November 30, 2011.

A copy of the proposed Final Mitigation Plan was issued to the consulting parties on February 1, 2012. Additional comments were received and have been considered, resulting in revisions to the Final Mitigation Plan. Additionally, a final meeting of the consulting parties was held on May 17, 2012; at which time, further comments were received. This Final Mitigation Plan reflects consideration of these various comments.

2.0 PROJECT HISTORY

2.1 2005 Memorandum of Agreement

Acting in accordance with Section 106 of the National Historic Preservation Act (NHPA), DOE ORO in 2000 determined that decontamination and decommissioning activities at the former K-25 Site would have an adverse impact on historic properties eligible for inclusion in the National Register of Historic Places. Since that initial determination, the Department has sought input of consulting parties and members of the public, commissioned studies, and hosted numerous public meetings in an effort to identify among competing recommendations the most appropriate method of commemorating K-25's historic legacy.

In 2005, the parties agreed that the use of the North End of the K-25 Building was the appropriate method of site interpretation that would take into account the adverse effects on historic properties. As a result, DOE, the SHPO, and the ACHP entered into a MOA that included the retention of the North End of the K-25 Building as well as numerous additional mitigation measures.

Subsequent to the execution of the 2005 MOA, DOE began the demolition of the K-25 Building, with the exception of the North End. The following mitigation measures contained in the 2005 MOA have been completed:

- Collection and storage of approximately 700 K-25 artifacts determined to be historically significant through a process agreed upon by consulting parties and documented in consultation meeting minutes
- Retention of Portal 4, also known as K-1028-45. It should be noted that as of June 2012, Portal 4 is extant. In February 2012 a group of consulting parties agreed, and confirmed in May 2012, that Portal 4 not be retained for preservation and restoration in favor of funds being directed to other preservation initiatives. DOE does not plan to retain Portal 4 but will be documenting it as a part of the Department's Level I documentation effort (identified as Stipulation 13 in the MOA)
- Feasibility evaluation of retaining the low chimneys of the S-50 Boiler House
- Transcription of approximately 70 oral history interviews conducted with former K-25 workers
- Production of two documentary videos utilizing oral history interviews and historic photographs
- Documentation of the K-25 and K-27 Gaseous Diffusion Process Buildings with the use of 360° IpiX-type photographs
- Collection and storage of a complete set of unclassified architectural and engineering plans and specifications of the K-25 and K-27 Buildings

2.2 2010 "Bridge" Memorandum of Agreement

In 2006, as demolition of the K-25 Building continued in compliance with the 2005 MOA, an employee working inside the K-25 Building fell 30 ft through the floor. Fortunately, the worker survived the fall; however, the incident called into question both the safety of the facility and the plans to retain the facility's North End. Work halted while DOE reevaluated the path forward for demolition of the K-25 Building.

During several subsequent meetings with the consulting parties, DOE described in detail the deteriorated conditions that presented serious safety concerns at the K-25 Building, including the North End. In 2009, the Department advised the consulting parties that both prohibitive costs and safety considerations would render three stipulations of the 2005 MOA no longer feasible. The three stipulations were preserving the North End of the K-25 Building, salvaging and preserving portions of the Roosevelt Cell, and retaining 10 feet of the interior walls of the U-shaped K-25 Building.

As efforts proceeded to implement the remaining stipulations of the 2005 MOA, DOE requested that the consulting parties consider other potential mitigation measures that might serve as alternatives to the three deleted stipulations. The parties offered a number of distinctly different alternatives that varied greatly in scope and cost. The Oak Ridge Heritage and Preservation Association/Partnership for K-25 Preservation (ORHPA/PKP) presented "Option K," otherwise referred to as the "stand-alone history center." In addition to the

construction of a new 33,000 square foot facility, Option K included the following mitigation measures:

- Demarcation and preservation of the K-25 footprint in perpetuity
- Display of authentic equipment in the history center
- Construction of a viewing tower
- Renovation of Portal 4
- Installation of historic markers throughout ETTP

Some of the consulting parties expressed concern that the proposed "Option K History Center" would prove too costly and requested consideration of other options, including a smaller and potentially open-air structure that would not require permanent staffing. Other parties continued to advocate for the preservation of a section of the K-25 Building. Although many suggestions were made, no consensus emerged.

In the absence of consensus on how best to commemorate the K-25 Building, in 2010 DOE, the SHPO, and the ACHP entered into a Bridge MOA. The Bridge MOA enabled DOE to remain in compliance with the NHPA until the parties could reach agreement on a Final MOA. DOE agreed to continue consultation with the parties while undertaking two feasibility studies designed to evaluate the various proposals for interpreting K-25's historical significance to the Oak Ridge community. The feasibility studies included a structural evaluation of the North End of the K-25 Building by Degenkolb Engineers and a review of potential interpretation options conducted by Informal Learning Experiences, Inc.

A key goal of the evaluation studies was to validate the structural integrity of the North End of the K-25 Building. Although DOE engineers had determined safety and cost considerations arising from contamination and deteriorated conditions prevented the retention of the North End of the K-25 Building, some of the consulting parties continued to advocate strongly for the preservation of a portion of the building. To address this issue, Degenkolb Engineers was directed to conduct a structural evaluation of four basic schemes for the preservation of a portion of the North End of the K-25 Building. The four schemes included the following:

- Retention of approximately one-third of the North End of the K-25 Building, including process equipment, primary piping, and the historic structure representing one operating unit of equipment
- Retention of two cells of the North End of the K-25 Building, including process equipment, primary piping, and the historic structure representing about one-twelfth of the structure
- Demolition of the entire North End of the K-25 Building and construction of a new visitor's center with a recreated stage that would display original equipment
- Demolition of the entire North End of the K-25 Building except for a portion of the face frame and wall and a small portion of the original Cell Floor retained to support one stage or one converter of original equipment, and provide adjacent space for additional exhibits

Degenkolb noted that the four schemes examined in the study were arbitrary in the sense that parts of each scheme might prove viable in a final option. While their task was to compare the cost and viewer experience of the four independent alternatives, the firm predicted that the ultimate proposal would likely vary somewhat from any of the specific alternatives evaluated in the study. Degenkolb also emphasized that conceptual budgets were prepared for comparative purposes only and should not be assumed to reflect total project costs. For example, the conceptual budgets did not include “soft” costs for exhibit design, installation, or maintenance; the cost of removing, decontaminating, or reinstalling equipment; the cost for addressing safety issues; or the cost for additional mitigation measures that might be implemented in addition to retaining a portion of the building. Degenkolb was not asked to evaluate the historic integrity of building remnants, worker safety issues, or mitigation options other than the four specified schemes.

In addition to the structural evaluation, Informal Learning Experiences examined two commemoration and interpretation approaches to Oak Ridge’s Manhattan Project Experience. One option included reservation-wide interpretation that would incorporate each of the Oak Ridge Reservation’s three “signature facilities” (the K-25 Gaseous Diffusion Process Building, the Graphite Reactor at Oak Ridge National Laboratory, and the Beta 3 Racetracks and Pilot Plant at the Y-12 National Security Complex). (The term “signature facilities” is a DOE designation and not a designation used under the NHPA. DOE defines their signature facilities as nationally significant historic properties that best convey and interpret the scale and importance of the Manhattan Project and provide the core of the Department’s ability to successfully interpret, whether *in situ* or through a museum or other interpretive setting, its Manhattan Project mission of developing atomic bombs during World War II). The second option focused solely on K-25. The study concluded that the visitor would receive the best experience if all three signature facilities were interpreted through a “hub and spoke” concept that provided a location in the city’s center (the hub) to learn the broader story of Oak Ridge’s contribution to the Manhattan Project. This would be combined with physical or visual access to each of the three facilities (the spokes), including a portion of the K-25 Building and its equipment. The study also concluded the following:

- A new museum facility or a faithful replica would be less desirable than preservation of the original structure
- The Department should work with the National Park Service (NPS) to develop the most effective interpretive and operational programming
- Interpretive efforts should be coordinated with other local and state organizations that have keen interests in preservation planning.
- Visitors could be offered a more personalized experience using modern technologies
- The footprint of the K-25 Building should be marked to delineate scale and shape.

2.3 2011 Preferred Memorandum of Agreement

In January 2011, DOE distributed the Degenkolb and Informal Learning Experiences feasibility studies to the consulting parties accompanied by an invitation for comment. The Department received written comments from representatives of eight agencies and organizations (Informal Learning Experiences, Oak Ridge Reservation Local Oversight

Committee, ACHP, the National Trust for Historic Preservation, Randall Travel Marketing, City of Oak Ridge, ORHPA/PKP, and the Atomic Heritage Foundation). The comments confirmed that despite a variety of opinions and perspectives on some major issues, consensus had emerged in a number of areas. The Department merged the areas of consensus into a draft Preferred Mitigation Plan. The plan's key elements included the following:

- Support for the adoption of the "hub and spoke" concept
- Consultation with the NPS for sitewide interpretation
- Delineation of the K-25 footprint for commemoration and interpretation activities

Comments reflected significant disagreement on the two proposals to retain a remnant of the K-25 Building and to construct a history center (Option K). Despite the lack of agreement, the comments and ensuing discussions provided DOE with excellent suggestions concerning the objectives of interpretation for each proposal. DOE incorporated several of these priorities, as well as the following factors, in preparing the Preferred Mitigation Plan:

- Feasibility study recommendations
- Public interest
- Visitor experience
- Accessibility
- Historic integrity
- Safety
- Cost

2.4 2012 Proposed Final Memorandum of Agreement

In October 2011, the Department issued the Preferred Mitigation Plan described in Section 2.3, above, and on November 17, 2011, a meeting of the consulting parties was held. A comment period was open until November 30, 2011. During the comment period, DOE received additional comments on the preservation measures proposed by DOE. Private individuals, and individuals or representatives of seven agencies and organizations (National Trust for Historic Preservation, East Tennessee Preservation Alliance, Atomic Heritage Foundation, the City of Oak Ridge, ORHPA/PKP, the Oak Ridge Site-Specific Advisory Board, and the Community Reuse Organization of East Tennessee) provided written comments. The comments indicated that despite differences of opinion on three major issues, namely:

- retaining a remnant of the K-25 Building,
- equipment preservation and display, and
- the features and attributes of a History Center,

it was evident that the differences were narrowing and the issues becoming less numerous. The Department studied the comments, evaluated them for feasibility, implementability, and cost, and made modifications to the Preferred MOA to reflect, as appropriate, the input received from the consulting parties and members of the public. The proposed Final MOA

that was issued by the Department in February 2012 reflected the input of the commenting parties.

2.5 2012 Final Memorandum of Agreement

After issuing the proposed Final MOA and proposed Final Mitigation Plan in February 2012, the Department received a limited number of comments. Six consulting parties and three interested parties submitted one consolidated set of comments. This collective group of nine was unified in offering their consensus opinion of the Department's proposed mitigation measures and included a concise request for selected modifications to the February 2012 Memorandum of Agreement.

The modifications sought included requests for preservation of additional process gas equipment, a request for formal dedication of the K-25 Building footprint, suitable space within proposed interpretive facilities for storage of additional equipment, design of the proposed Viewing Tower so that it could view the entire K-25 Building footprint, an agreement to consider future expansion opportunities for the space within the Fire Station (proposed to house the K-25 History Center) and other minor modifications.

Comments from the other consulting parties requested that DOE prioritize preservation initiatives to preserve site resources before off-site resources (such as the Alexander Inn), and increase the level of specificity in the Memorandum of Agreement, in particular to provide scheduling and implementation information, where possible.

In late March 2012, the NPS submitted a NHPA Section 213 Report. The NPS was asked to prepare a report pursuant to Section 213 of the NHPA at the request of the ACHP. The NPS report offered recommendations on how DOE could best provide interpretive opportunities. The insights of the NPS are important, in particular because of the possibility of a future NPS Manhattan Project Historic Park unit in Oak Ridge. The need for suitable interpretive opportunities is understood.

Correspondence followed from the ACHP who suggested that DOE hold a meeting of the consulting parties to enable a discussion of the NPS Section 213 Report. DOE agreed with the ACHP recommendation and held a final meeting of all of the consulting parties and the NPS on May 17, 2012. The meeting enabled an open discussion of the NPS report among all of the consulting parties in attendance. The NPS recommended three interpretive options that both echoed and enhanced earlier proposals that had been made. Two NPS options proposed saving portions of the K-25 Building itself, while a third option proposed a recreation of a portion of the K-25 Building. The NPS also recommended several documentation efforts to further support the historic record.

All of the comments received following the February 1, 2012, proposed Final MOA, including those offered at the May 17, 2012, consulting parties meeting have been considered. The comments have been used to develop the final MOA and Final Mitigation Plan, resulting in both a refined and an enhanced commitment that will provide more meaningful interpretation opportunities and preservation values.

To enable a more cohesive presentation of the comment topics and DOE's responses to them, the responses to the comments received from consulting parties on the February 2012 transmittal have been added to the earlier responses. This cumulative information is provided in Section 3. The comments submitted by the NPS in the Section 213 Report have also been considered and are addressed in Section 3.3.1.

3.0 RESPONSE TO COMMENTS RECEIVED REGARDING THE PREFERRED MITIGATION PLAN (OCTOBER 2011), THE PROPOSED FINAL MITIGATION PLAN (FEBRUARY 2012), AND THE NATIONAL PARK SERVICE SECTION 213 REPORT

DOE distributed the Preferred Mitigation Plan to the consulting parties in October 2011. The Department hosted an all-day consulting parties meeting on November 17, 2011, to provide an opportunity for the parties to share questions and comments. Sixty individuals, including the consulting parties as well as other parties, completed the sign-in sheet. Each party was invited to provide comments through transcribed oral testimony at the meeting, comment cards provided at the meeting, or comments submitted by letter or email through November 30, 2011. DOE received written comments from 24 organizations and/or individuals.

The comments and related DOE responses are organized into six general categories:

1. The "hub and spoke" concept and consultation with the NPS
2. Demarcation of the K-25 Building footprint
3. Retention of a remnant of the K-25 Building
4. Preservation of equipment
5. Display of authentic equipment and other artifacts at the History Center
6. Restoration of the Alexander Inn

The six general categories of verbal and written comments (as enumerated above) provided to DOE were responded to in the proposed Final Mitigation Plan that DOE issued for a 15-day comment period in February 2012. The documents were transmitted to the signatories, invited signatories and consulting parties for their review. Comments on the February 2012 Proposed Final Mitigation Plan came from one group of six consulting parties and three interested parties who had consolidated their comments, offering a consensus opinion, and two organizations who commented separately.

As described in more detail in Section 2.5 above, the NPS submitted a report prepared pursuant to Section 213 of the NHPA in late March 2012. The comments and recommendations of the NPS fall within the same categories as those noted above. A review and discussion of the NPS recommendations and how they were considered with regard to mitigation needs is found within Section 3.3.1, below.

All of the comments received either have been responded to in the following subsections or may be found to have been incorporated in the final MOA (June 2012).

Copies of all comments are available upon request from the DOE Oak Ridge Information Center.

3.1 The “Hub and Spoke” Concept and National Park Service

DOE concluded that most parties supported the decision to adopt a “hub and spoke” concept for a coordinated and comprehensive reservation-wide interpretation program. Some but not all of the parties requested that DOE include language in the Final Mitigation Plan that would express a commitment to use the American Museum of Science and Energy, or an expanded library and city civic center that incorporated the museum, as the “hub.”

As envisioned under the “hub and spoke” concept, visitors would begin their tour at a “hub” located in the center of Oak Ridge, where they would receive an overview of Oak Ridge’s three Manhattan Project “signature” facilities and their linkages with other Manhattan Project facilities in Hanford, Washington, and Los Alamos, New Mexico. From the “hub,” visitors would be directed to the “spokes” or the location of the three signature facilities at the Y-12 Nuclear Security Complex, Oak Ridge National Laboratory, and the ETTP to receive a more detailed interpretation. Because the three signature facilities are located at sites that are managed respectively by DOE’s National Nuclear Security Administration, the Office of Nuclear Energy, the Office of Science, and the Office of Environmental Management, approval for the “hub and spoke” option will require coordination with each departmental element.

One version of the “hub and spoke” proposal would be contingent upon a decision by Congress and the President on whether to implement the NPS’s recommendations contained in the *Manhattan Project Sites Special Resource Study*. A decision to designate and fund Oak Ridge as part of a new national park would play a major role in determining the potential location and character of the “hub.”

Whether Congress ultimately will approve Oak Ridge as part of a new national park is uncertain, making it impossible at present to finalize decisions regarding both the size and specific location of the “hub.” The Oak Ridge Office of Environmental Management will continue discussions with other DOE ORO Programs, the NPS, the City of Oak Ridge, and others to implement the concept for reservation-wide historic interpretation. Because of the uncertainty associated with the new national park as well as the need to consider the input from the range of Departmental programs and the various stakeholders, the final MOA (June 2012) for the interpretation of ETTP does not include the adoption of the hub and spoke concept. DOE recognizes that K-25 is a “spoke,” but acknowledges that additional development of the overall “hub and spoke” approach is needed. Provided the other parties support the “hub” concept, the location will be determined as the discussion for the other signature facilities proceed. The NPS in their Section 213 Report recommended that DOE and its consulting parties explore additional site-specific strategies for the interpretation of the K-25 Site during World War II and in the post-war contexts; DOE is committed to this consultation in the larger context of the “hub and spoke” discussion.



Figure 1. K-25 Preservation Footprint

only when a compelling need is demonstrated for the easement. The road will continue to be open for access to this area as well as for other potential uses to support the brownfield industrial park being established.

The collective commemoration of the Manhattan Project will depend on the histories and contributions of the Oak Ridge National Laboratory, the Y-12 National Nuclear Security Administration facility, the Oak Ridge community itself, as well as the Hanford Site in Washington and the Los Alamos National Laboratory in New Mexico. DOE EM at the K-25 Site is committed to “doing its part” in telling the larger story of the Manhattan Project.

3.2 Marking the K-25 Building Footprint

Comments at the November 17 meeting included requests that DOE expand the area around the K-25 Building associated with interpretive activities to include more than just the building footprint. In response to a comment on the February 2012 proposed Final MOA, DOE agrees to the formal dedication of a K-25 “Preservation Footprint,” shown in Figure 1. Dedication is proposed to coincide with the opening of the Equipment Building, Viewing Tower, or History Center, whichever of these events occurs first. For commemoration and interpretation activities all of the area located inside the road that currently surrounds the K-25 Building (exclusive of mission-essential property), will be dedicated. Those easements that are necessary or appropriate for the development of adjacent properties will be considered, so long as they do not interfere with the K-25 footprint viewscape. Those easements that are necessary for DOE mission, for historic interpretation or for safety reasons that may impact the K-25 footprint or its viewscape will be considered

Some parties requested that the Final Mitigation Plan include additional detail about how the K-25 Building footprint will be marked. DOE will employ the services of a professional design team to determine a design solution that best interprets the scale, proportion, and height, and the unique mile-long “U” shape of the structure, including how the scale and shape of the building was influenced by the repetitive nature of the uranium enrichment process. The design team will be instructed to consider all design solutions previously recommended by consulting parties. A final design for the K-25 Building footprint will include a viewing tower with a height sufficient to enable observation of the entire K-25 Building footprint. The tower may be newly constructed or an existing facility may be modified; the design team will make recommendations on how best to integrate this important aspect of the Building’s interpretation into the overall plan.

Comments regarding the K-25 building also included consideration of leaving the structure’s concrete pad intact after demolition of the facility. While the Comprehensive Environmental Response, Compensation, Liability Act (CERCLA) Record of Decision calls for the concrete floor or slab of the K-25 Building to be removed or covered, DOE will leave the concrete pad in place during demolition of the building. After demolition, DOE will examine contamination levels on and beneath the slab and attempt to determine short- and long-term costs associated with removing the slab, covering the slab, or leaving the slab as is. While DOE agrees that retaining the slab would improve site interpretation, a decision concerning the slab’s role as part of the facility’s historic interpretation will depend upon whether the slab can be safely and cost-effectively left in place and exposed for public access. A feasibility study evaluating the aforementioned factors will be conducted once demolition of the building is complete, which is currently scheduled to occur in 2014. DOE will make the findings of the study available to the public, and implement the recommended action pursuant to the schedule in the Execution Plan that is appended to the final MOA. If the slab can be safely and cost-effectively left in place, it will be integrated into the final design for the dedicated building footprint.

3.3 Retention of a Remnant of the K-25 Building

Some consulting parties recommended the complete demolition of the K-25 Building and its replacement with an interpretive history center. Others requested adoption of Degenkolb’s Scheme 2, which would retain a two-cell portion of the structure, or approximately one-twelfth of the North Tower.

At a 2009 consultation meeting, DOE described deteriorated conditions and contamination issues that presented serious safety concerns at K-25. These include:

- Structural deterioration, including damage to more than 160 corbels and beams, roof deterioration, water damage that had weakened concrete precast panels where workers walked, and rusted rebar
- Operations floor conditions, including concrete panel failure that restricted access and hazardous falling panel material that had collected on the Cell Floor whose replacement was constrained by lack of access

- Safety conditions resulting from wartime code exemptions, including concrete columns and vault walls not anchored to footers, inadequate fire protection, and a 60-year-old electrical system

DOE noted additional worker safety issues associated with some of the preservation work stipulated in the 2005 MOA. The issues included additional corbel repairs that require more elevated work, fall potential during roof replacement, risk from falling debris during equipment removal, radiological exposure during decontamination, and removal of transite siding that would require asbestos protection.

In 2009, DOE engineers concluded that due to the safety issues caused by the deteriorated conditions and contamination as well as the resultant costs for addressing the issues, retaining a portion of the K-25 Building would be cost prohibitive. (Degenkolb was not asked to provide cost estimates for decontamination and declassification of building remnants left in place.) In response to several requests from the consulting parties, DOE reconsidered Degenkolb Scheme 2 to retain a two-cell portion of the structure. Although Degenkolb engineers demonstrated the structural feasibility of retaining a remnant of the K-25 Building, DOE concluded that significant costs associated with visitor safety, security, and historic integrity rendered the proposals to retain a portion of the K-25 Building financially unfeasible.

Working with all of this information, DOE developed a comprehensive mitigation plan that, without retaining a remnant of the building, would seek to illustrate the structure's enormous scale and unique "U" shape. The plan also sought to emphasize the repetitive nature of the diffusion process by providing visitors access to authentic equipment, artifacts, and oral histories. The Final Mitigation Plan adopts a number of measures recommended by Degenkolb, and other consulting parties, including demarcation of the building footprint, construction of a viewing tower, and a structure (the "Equipment Building") on or in proximity to the original footprint for exhibiting authentic equipment.

In light of fiscal constraints, several consulting parties requested that DOE implement the mitigation plan in phases to accommodate the possibility of additional funds in the future. In response to these requests, the February 2012 proposed Final Mitigation Plan contained a number of contingencies, including a building scaled to house a single cell that would be suitably sized space for interpretation, miscellaneous storage, viewing, ingress and egress.

In response to the recommendations offered by the NPS in their Section 213 report, DOE has agreed to make additional changes to the measures previously proposed in the February 2012 proposed Final Mitigation Plan. The Equipment Building proposed by DOE will be sized to achieve the height of the K-25 Building, with three stories and a basement to enable equipment displays to be configured in a manner that is most representative of operational conditions. DOE agreed that the structure would be designed to replicate the scale and shape of two cells of the original structure and, along with the design solution for demarcating the footprint, would demonstrate to visitors how the single cell, six converters, a basic unit of the enrichment process, was repeated approximately 500 times inside the unique mile-long "U" shaped footprint. DOE went on to note that should additional funds become available

following a future decision by the NPS to designate Oak Ridge as part of a Manhattan Project National Park, the structure would be able to be expanded to house additional authentic equipment. The building will be proximate to the Fire Station, where additional authentic equipment, artifacts, and oral histories will be made available to visitors. The Viewing Tower will be located nearby and will reinforce the scale and dimension of the K-25 Building and the unique "U" shape of the footprint. The design team will work to create a cohesive interpretive experience for visitors to the various points of interest.

In response to the comments received on the February 2012 proposed Final Mitigation Plan, DOE's Final Mitigation Plan has been modified to preserve additional authentic equipment. The Final Mitigation Plan now contains a larger building (the "Equipment Building") scaled to house additional equipment to that identified in the February 2012 proposed Final Mitigation Plan. The following expanded list of items will be preserved for display as requested: (a) two size 2 cells and their associated equipment and piping, (b) representative operating floor equipment; (c) a 0, 00, and 000 converters, axial compressors and motors; and (d) one 40-ft centrifuge casing.

3.3.1 Consideration of Comments Provided in the National Park Service Section 213 Report

In January 2012, the ACHP requested that the Department of the Interior, through the NPS, review the preservation measures proposed by DOE. The review was requested by ACHP pursuant to Section 213 of the NHPA. The Department welcomes the comments of the NPS for providing additional insight especially as it relates to interpretation and visitor experience.

In its report, the NPS recommended that DOE retain the maximum practical amount of the original building and equipment to enable the best possible interpretation of the facility and its operation. The NPS also noted the value of location, of being at the actual K-25 Site, and the concept of "authenticity" to the interpretive experience. As a part of their report, the NPS offered three interpretive options for the K-25 Building. Through consultation, DOE has modified the mitigation proposal reflective of the 213 report's "concept B", the interpretation of a two-cell arrangement with a truck alley to illustrate and interpret the gaseous diffusion process.

DOE agrees that preservation of the maximum practical amount of the original building and equipment would clearly enable the best possible interpretation of the building. However, the need for the Department to address the risks and hazards posed by the environmental contamination of the structure and equipment to meet DOE's Comprehensive, Environmental Response, Compensation, Liability Act (CERCLA) obligations is the necessary focus. The duality of, and in this instance conflicting, objectives of environmental clean-up and preservation wherein both purposes could be attained represent laudable goals, but result in expenditures of both time and funding that cannot be supported in the present fiscal climate. In order to complete DOE's clean-up requirements effectively and with worker safety as the priority, and address all of the contaminants and contaminated media, it is necessary for the building to be removed down to the slab.

Stipulation 2 of the final MOA contains the provisions associated with preservation of the original K-25 Building slab. DOE will retain the slab during building demolition and then evaluate it for preservation purposes. If it is suitable for access, it will be integrated in our preservation planning and become the centerpiece of our interpretation of the building site. As described above in 3.2, DOE will be setting aside the entire K-25 Building footprint, which is larger than the slab, for commemorative and interpretive purposes. These mitigation measures integrate preservation of the slab and the footprint together and afford many aspects of historic integrity, including location, setting, materials, and the industrial design and workmanship of the period. We will work with our site design professionals to maximize interpretation of the building on the slab by demarcating the corners, featuring displays and markers, and including other attributes to provide visitors with as much of the feeling and association of the original setting as possible.

The NPS also provided recommendations on equipment preservation and many of the interpretive opportunities that could be provided by not only preserving the equipment, but also preserving it *in situ*. DOE has, in working with our consulting parties, developed a robust effort to inventory and review, document, preserve, and display equipment. The gaseous diffusion process is well documented and we will work with our museum design professionals to impart as much of this technological information for visitors, researchers and scholars as possible. The concept views provided by the NPS will be able to be referred to in the museum design phase to assist with our design decision-making. Methods to recreate the "worker experience" will be of paramount importance. The worker experience will also feature photographs and other means to depict life at Happy Valley. The worker experience in the K-25 Building will be exhibited by providing critical attention to displaying the equipment in a manner that recreates the orientation and other attributes found in the operating facility. We will use the Equipment Building, the History Center, and the multi-media attributes of the Virtual Museum to showcase this important and truly unique aspect of K-25's technological history from the macro-scale to the details. It is planned that the display of the technological to the typical will be available in our interpretive facilities. In addition to the process equipment to be featured, people will be able to see examples of items such as telephones, bicycles, signage, fire alarm boxes, newspapers, and other historic artifacts that provide a greater sense of setting and context, including the context provided by the tenor of the war years.

Another stipulation has been added to the MOA to address the recommendation of the NPS for a Level I Documentation effort for the K-25 Building, and the K-1037 and K-1028-54 buildings. DOE will work with the NPS on the development of this important recordation and documentation effort. DOE has a significant body of materials including drawings, photographs, plans and other items that will assist with the Level I documentation. Our objective is to use as much of the existing archival materials as possible, including archival photographs taken by Ed Wescott.

DOE has included a stipulation in the MOA to develop a reference list of available unclassified documents on the K-25 Building activities post World War II and will research its inventory of classified documents to be considered for potential future declassification. DOE will continue to maintain these materials and all classified documentation on the overall

process; it will not be lost with the demolition of the K-25 Building. Additionally, should the technology or information related to it be declassified in the future, provisions may be able to be made to provide more information at that time through the Virtual Museum or other venues at the K-25 Site.

3.4 Mitigation Measures for the K-25 North End Demolition

DOE replaced the retention of the North End contained in the 2005 MOA with the mitigation measures contained in the proposed Final MOA (February 2012), which has been revised to note the mitigation measures contained in the June 2012 final Memorandum of Agreement:

- Formal dedication of all land inside the road that surrounds the K-25 Building footprint, exclusive of DOE mission-essential facilities, to commemoration and interpretation activities
- Assessment of the feasibility of leaving the original concrete slab exposed
- Construction of a viewing tower of sufficient height that oversees the building footprint
- Commitment to decontaminate and display two size 2 cells similar to the Roosevelt Cell; representative operating floor equipment; a 0, 00, and 000 converter, axial compressors and motors; and a 40-ft centrifuge casing as well as additional equipment and artifacts identified by an inventory team selected to perform this function
- Agreement to utilize, where appropriate, salvaged materials such as the bricks from S-50 Boiler House Chimneys in a display or displays
- Design and establishment of the K-25 History Center on the second level of the Fire Station, overlooking the footprint of the K-25 building. This is in addition to the separate structure (the Equipment Building) for the two size 2 cells and additional equipment to be preserved as described above, which includes Cold War era equipment. DOE will also be providing information on the K-25 Site's contribution to the Cold War through written materials, displays, and/or through the Virtual Museum
- Design, development, and maintenance of an interactive K-25 Virtual Museum (to be available on-line)
- Display or interpretation, through the Virtual Museum, of equipment previously identified for preservation
- Design, fabrication, and installation of 12 NPS standard-type wayside exhibits throughout the site to commemorate points of historic significance
- Design and make available print copies of a self-guided tour brochure that utilizes Quick Response Codes to provide additional information and links to the Virtual Museum
- Appointment of a K-25 Historic Preservation Coordinator to oversee implementation of the MOA

As described in Section 2.1 above, DOE has determined that the preservation and renovation of Portal 4 is not a significant component of the interpretation of the K-25 Site and has removed it from the final Memorandum of Agreement. The Portal retention and renovation, agreed to in the 2005 MOA and the Bridge MOA, respectively, would utilize resources better directed to the additional equipment preservation DOE will be performing. In comments received by DOE from the consolidated group of six consulting parties and three interested

parties, the parties indicated to DOE that the Portal 4 stipulation be deleted in favor of other preservation initiatives.

3.5 Preservation and Display of Equipment

Recommendations in the 2005 MOA presumed that the North End of the K-25 Building would be retained. Some of the building's original equipment was identified for retention until a determination was made whether it was feasible to include the equipment as part of historic interpretation inside the facility. Subsequent to the decision documented by DOE in the June 9, 2009, letter to the signatories and consulting parties to the 2005 MOA that it was not feasible to retain the North End of the building, the ORHPA/PKP presented an option, referred to as Option K, for displaying a portion of the equipment. Option K included construction of a new, approximately 33,000 square foot structure to display equipment identified in the 2005 MOA. The remarkable knowledge of the Association's membership on K-25's history, and the membership's contributions to the mitigation plan recommendations were invaluable. Various parties expressed concern, however, with the costs for the construction, operation, and maintenance of the History Center proposed by ORHPA/PKP. One less costly alternative proposed was a smaller center, possibly a pavilion. The equipment identified for temporary retention in the Bridge MOA was based largely on equipment identified by ORHPA/PKP for use in the exhibits they had designed. DOE agreed to retain all of the equipment previously held for potential future interpretation during preparation of a Final Mitigation Plan that would determine what equipment would be retained for interpretation and commemoration.

The Department's Preferred Mitigation Plan included an unstaffed open-air pavilion as well as a K-25 History Center to be housed on the second level of the Fire Station. The plan would house large authentic pieces of equipment in the pavilion, with smaller equipment and artifacts displayed in the Fire Station's History Center.

Numerous consulting parties voiced concern about the potential for weather damage to equipment as well as the discomfort of visitors in an open-air pavilion. In response, the Final Memorandum of Agreement includes a provision that DOE will obtain the services of a professional site design team to address options for an enclosed building referred to as the "Equipment Building", to house authentic equipment (as described above) and enable suitable space for interpretation, miscellaneous storage, ingress, egress, and visitor viewing.

In addition to the comments received on the earlier proposals for equipment display, DOE received further comments on equipment display in the proposed Final Mitigation Plan issued in February 2012. Comments provided by the consolidated group of six consulting parties and three interested parties requested that DOE honor the Bridge MOA by preserving at least 13 Size-2 compressor assemblies and appurtenances to recreate a Process Alley; one example each of the 0, 00, and 000 converters, axial compressors with motors, a 40-ft centrifuge casing; and other equipment that may be identified during the equipment review and inventory. As described in Sect. 3.4., above, DOE will preserve a significant portion of the additionally requested equipment, namely the representative operating floor equipment, 0, 00, and 000 converters, axial compressors with motors, 40-ft centrifuge casing, and other

equipment that may be identified during the equipment review and inventory. DOE will also plan to facilitate the timely transition from the preparation of equipment for display to the actual display in the Equipment Building to facilitate earlier public viewing opportunities.

DOE has concluded that preservation and display of the equipment necessary to recreate a Process Alley is not the best use of resources at this time, especially given the additional costs for processing and transport of the equipment, decontamination/declassification and preparation for display, storage/staging, and ultimately the increased size needs for the Equipment Building to house the display. The equipment records, photos of the equipment and its layout and configuration, IpiX photos, photos during operation, drawings, plans, and other information that will enhance the visitor's experience and knowledge will be available via the K-25 Virtual Museum. The History Center will also feature photographs, plans, drawings, equipment records and other information that will offer many opportunities for interpretation and understanding of the technological history of the K-25 Site and its critically important role in the Manhattan Project and later, in the Cold War-era.

Since 2002, DOE has collected, catalogued, photographed, and stored approximately 700 artifacts identified with both the Manhattan Project and Cold War eras of K-25's history. A team selected by the consulting parties identified the artifacts chosen to convey the history of K-25, which included machinery, equipment, photographs, newspapers, models, phones, and bicycles. The artifacts are being stored in dedicated Sea-land containers inside K-25 or at the Office of Science and Technical Information. The storage location is based on the size, material, classification, and contamination level of the artifacts.

To identify the equipment and artifacts most appropriate for public display, DOE will conduct an inventory of all the objects identified for preservation in prior MOAs, including those already salvaged from K-25. The inventory shall be conducted in a manner consistent with Section 110(a) (2) of the NHPA, the U.S. Department of the Interior's "Guidelines for Archaeology and Historic Preservation." The inventory will be designed to record the condition of the artifacts as well as the appropriate methods for preservation. The inventory will begin with the establishment of historic contexts and a database system that can be used to evaluate the significance of each artifact. The database will be designed so that similar artifacts can be grouped by type to avoid duplication. An evaluation statement that makes clear the significance of the artifact within one or more historic contexts will be included in the database. The inventory will include information for any activities required to make the artifacts accessible to the public.

Some confusion existed about the preservation of equipment from K-25. A number of parties expressed concern that the absence of specifically listed equipment in the Preferred Mitigation Plan did not conform to the commitments of the Bridge or prior MOAs. These stipulations specified what equipment should be preserved while DOE determined which items could practically and cost effectively be displayed. The stipulations did not contain commitments to display specific equipment or any of the other 700 artifacts that have been collected and stored. DOE addresses equipment stipulations from the 2005 Bridge MOA in the final MOA, and a summary is provided below.

DOE will decontaminate two size 2 cells, similar to the Roosevelt Cell, for public display. In response to comments from consulting parties received on the February 2012 proposed Final Mitigation Plan and MOA, DOE will also decontaminate representative operating floor equipment; a 0, 00, and 000 converter, axial compressors and motors; and a 40-foot centrifuge casing. As noted above, DOE will also conduct an inventory designed to identify the equipment and artifacts most appropriate and feasible for display in the Equipment Building that will display the authentic process equipment, and the History Center. The inventory will be completed by a team that will include a museum professional, a professional historian, subject matter experts with information about the history and use of the artifacts, a photographer, and a representative of DOE. A museum professional will also be retained, and will be able, upon request by DOE, to work with members of the ORHPA/PKP and the City of Oak Ridge Historian to obtain assistance with design of the exhibits, displays, and other means to interpret the site's history within the context of a museum setting.

DOE will decontaminate equipment and artifacts that the inventory team determines are appropriate and feasible for display. The team will consider what additional equipment and artifacts might be appropriate for display if additional funds become available in the future to expand the areas used for display of equipment and artifacts. A portion of the equipment and artifacts not identified by the inventory team for display will be able to be interpreted via the Virtual Museum.

In response to consulting party comments, the proposed Final MOA issued in February 2012 stipulate that after the equipment and artifacts not selected for display in the History Center at K-25 are documented for interpretation in the Virtual Museum, DOE may offer them to third parties such as the Smithsonian or the NPS or others for use in museum collections if the equipment or artifacts are determined to be an appropriate, safe, and secure repository for the artifacts. In response to the issuance of the proposed Final MOA in February 2012, DOE received comments from the consulting parties requesting that DOE should loan equipment and artifacts not selected for retention or display to third parties, while retaining ownership of all of the inventoried equipment.

DOE understands the desire of the consulting parties that we retain these artifacts in perpetuity. However, in light of space limitations, storage costs, and what would constitute an ongoing management responsibility (essentially a curatorship) and its costs, DOE will plan to do as described above, namely to offer the equipment not selected for retention and/or display to third-parties with appropriate and secure repositories. The results of the equipment inventory and review will be provided to the SHPO and the ACHP.

The discussion of how best to display the artifacts included concerns about the appropriateness of using the second level of the Fire Station as the K-25 History Center. Most of the concerns were associated with the 7,500 square feet of space available in the Fire Station compared to the 33,000 square feet proposed by the ORHPA/PKP as Option K for the History Center. DOE concluded that the combination of the Fire Station and the Equipment Building is the most viable and affordable method for displaying authentic equipment and artifacts. The Fire Station has no contamination issues; is Americans with Disabilities Act

accessible; has heating, ventilation, and air condition and restroom facilities; and has 24-hour security. In addition, the facility offers opportunities for use as a history center. For example, a classified conference room located in the second floor and used during the Cold War era could be used as a theater for presentations. Since the Fire Station building was originally constructed to house the K-25 plant protection facilities during the Cold War era, the Fire Station is located within short walking distance of the K-25 Building site, providing easy access to the building's footprint, displays, wayside markers, etc. The Fire Station also provides important historic context.

The History Center will be located on the second level of the Fire Station. If additional funds become available and the City of Oak Ridge (the owner of the building) offers additional space for lease, the History Center could be expanded to the first level to utilize more of the building's features for interpretation.

DOE currently leases the second level of the Fire Station from the City of Oak Ridge, which owns the building. While DOE will own and be responsible for the design, development, installation, and maintenance of the History Center exhibits, the City of Oak Ridge will retain ownership and maintenance responsibilities for the structure. The History Center will be operated and maintained by volunteers. Although there will be costs associated with reconfiguring the non-load-bearing walls and raising the drop ceilings to accommodate exhibits, the rehabilitation of the Fire Station provides an affordable solution that includes the preservation of a structure directly associated with K-25's Cold War era.

The History Center exhibits will be designed by museum professionals who will utilize a wide range of authentic artifacts, oral histories, interactive opportunities, and social media. The integration of personal digital devices likely will be combined with more traditional interpretive strategies. The exhibits will interpret K-25's full history, from the Manhattan Project and Cold War eras through demolition, and will commemorate both the scientific and social history of K-25, including Happy Valley, an area near the site where construction workers were housed.

In addition to the equipment, artifacts, and oral histories displayed in the History Center, additional artifacts will be available for viewing through the K-25 Virtual Museum. The Virtual Museum will be professionally developed and designed, and will provide a web presence that will offer users easy, 24-hour access to oral histories, photographs, video footage, photographs of material objects, architectural drawings, and sound recordings. Information from the Center for Oak Ridge Oral History (COROH) will also be available to the Virtual Museum, whose "Digital Memory Box" feature will enable oral history collection efforts to continue after the funding for the COROH has been expended.

The time that visitors to Oak Ridge have to explore the K-25 site may be limited. With virtual access to these materials, they can enrich their experience by exploring K-25's history at their leisure and at any location with internet access. Since the Virtual Museum's information may be periodically updated, visitors will have access to materials and exhibits unavailable at the time of their visit. The Virtual Museum also will give individuals who cannot physically visit the site access to resources that will help them gain a better

understanding of K-25's history. The Virtual Museum also offers appeal to younger visitors more accustomed to electronic and interactive learning opportunities.

The Virtual Museum will cover the plant's history from construction through demolition. The Museum will provide interpretation of the K-25 gaseous diffusion building as well as the broader plant complex. A unique, three-dimensional archive interface will enable visitors to navigate through a 3D recreation of the K-25 complex and the K-25 gaseous diffusion process building in particular. The 3D recreation will combine both education and exploration in interpreting the places and people of K-25's history. The reproduction of K-25's historical setting will immerse the visitor in the environment of the actual processing building, cafeteria, portals, and other day-to-day aspects of the complex. The Virtual Museum's goal is an interactive, multimedia engagement that enables users to experience, with the support of primary and secondary archival materials, a historically recreated environment.

In summary, the final MOA (June 2012) includes a number of stipulations that address equipment inventory, decontamination, preservation, interpretation, and display by various means, including physical displays on site as well as via a Virtual Museum. The combination of the Equipment Building to display equipment, the History Center in the Fire Station, the wayside markers, Virtual Museum, and the overall measures to interpret the formally dedicated building footprint will provide both excellent display space and a diversity of opportunities for DOE to tell the story of the K-25 Site. The support of a professional site design team with experience interpreting historic sites, and a museum professional are also stipulated to best achieve a cohesive interpretive experience for visitors, students, researchers, and others with an interest in this important aspect of our national and technological history.

3.6 The Alexander Inn

A proposed grant to help restore the historic Alexander Inn was the only recommendation contained in the Preferred Mitigation Plan that did not represent a request from the consulting parties. Off-site mitigation is a technique commonly used in the Section 106 process when an agency determines that it is not feasible to avoid adverse effects to an historic property, such as a necessary demolition. In many instances, agencies have provided preservation funds for endangered historic properties to partially compensate the public for the loss of a historic property. On occasion, as is the case with the Alexander Inn and the K-25 Site, the two properties are connected historically.

DOE added a number of mitigation measures to the Preferred Mitigation Plan to compensate for the three measures that were removed from the 2005 MOA. DOE also sought to strengthen the plan by assisting with the preservation of another endangered Manhattan Project facility known to be important to the preservation interests of the larger Oak Ridge and East Tennessee community. DOE also believes that preservation of the Alexander Inn is important. Other consulting parties expressed similar views during the May 17, 2012 consultation.

DOE heard varying perspectives about the appropriate level of funding for the Alexander Inn, ranging from nothing to approximately \$900,000, the amount the ETPA indicated at the consulting parties meeting in November 2011, would be needed to purchase and stabilize the structure, address code violations, and ready the exterior of the building for transfer to a developer. Other parties urged a smaller grant of approximately \$500,000 to purchase and stabilize the structure from further deterioration. DOE has increased the amount of the grant from the \$350,000 proposed in November 2011 to \$500,000, with funds separately associated with purchase and stabilization.

Given the number of competing interests for limited funds, DOE never entertained the idea of providing all of the money needed to prepare the Alexander Inn for use or transfer. As a mitigation alternative, DOE wished to provide the preservation community with “seed money” needed to leverage additional funds for the Inn’s renovation. Following consultation with the ETPA, the two parties determined that the following measures would be appropriate for the Alexander Inn:

Following the execution of the MOA by all signatory parties, DOE intends to provide a grant in 2012 to East Tennessee Preservation Association (ETPA) or its fiscal agent, Knox Heritage, Inc., for purchase and stabilization of the Alexander Inn (also known as the Guest House), as partial mitigation for the adverse effects at the ETTP site. The purpose of the grant is to support the preservation of the Alexander Inn and to transition the Alexander Inn to a private developer for economic benefit to the community, and to offset the loss of historic properties at ETTP by preserving similarly situated historic properties in Oak Ridge. The DOE intends to provide \$350,000 for purchase of the property, and an additional \$150,000 for building stabilization activity. The terms of the grant shall include, among other things, that within 180 days of receipt of the grant, ETPA will finalize the purchase or other acquisition of the Alexander Inn by ETPA, Knox Heritage or by a private owner. Within 180 days of receipt of the grant, ETPA will finalize the purchase or other acquisition of the Alexander Inn by ETPA or Knox Heritage or by a private owner. The grant funds may be used to acquire the Alexander Inn, including payment of any closing costs related thereto, or for acquisition and foreclosure of the first mortgage on the property. The sale of the Alexander Inn to private ownership or end user shall include or require a historic preservation easement for the external building to protect the historic and cultural values of the building. The Secretary of the Interior Standards for Rehabilitation of Historic Buildings will be followed for the rehabilitation. The City of Oak Ridge has agreed to work with ETPA and the private owner in developing an acceptable schedule, not to exceed 365 days from date of purchase, for bringing the Alexander Inn into compliance with all city ordinances. In the event the ETPA is unable to finalize the purchase and sale of the Alexander Inn in the agreed upon amount of time or any extended period approved by DOE, the grant will be terminated and all monies refunded in full to DOE (less any funds paid for allowable cost incurred under the grant).

3.7 Mitigation Plan Costs

DOE to date has expended approximately \$3 million on K-25 mitigation measures. DOE estimates that implementation of the additional final mitigation measures will cost

approximately \$17.5 million, for a total conceptual estimated cost of ~\$20.5 million. Further information on the cost estimate is found in the Execution Plan appended to the Final MOA.

The Execution Plan also includes DOE's plans for requesting funds until implementation of the mitigation measures is complete. Funding will be subject to Congressional appropriations. As stated in the MOA, the agreement is not an obligation of Federal funds, and cannot serve as the basis for the transfer of Federal funds without adherence to proper procurement rules and regulations, in this instance as associated with financial assistance awards. As with all Federal funds expenditures, nothing should be construed in this Mitigation Plan to imply that Congress will, at a later date, appropriate funds to meet potential deficiencies.

4.0 IMPLEMENTING, MONITORING, AND FUNDING THE MITIGATION PLAN

As specified in the Bridge MOA Stipulation 17, the final MOA (June 2012) and its appended Execution Plan include specific stipulations dealing with the order of completion, commitment to seek firm funding, timetables for completion, and methods for monitoring and progress tracking. In order to support the timely implementation of the mitigation plan, DOE EM will appoint a K-25 Historic Preservation Coordinator upon execution of the MOA. The Coordinator, who will have access to both Secretary of the Interior qualified personnel and to senior DOE personnel with decision-making and commitment authority, will be responsible for carrying out the stipulated provisions noted above and in the MOA. Priority will be given to funding mitigation measures with tangible and visible results when project sequencing allows. Twice per year, the K-25 Historic Preservation Coordinator will submit a progress report to all signatories. The report will summarize all work accomplished during the reporting period and identify concerns with future efforts. At the completion of all mitigation measures, the Coordinator will submit a final report to all signatories. Copies of the aforementioned reports will also be available to the public.

The K-25 Historic Preservation Coordinator will continue to develop scopes of work and estimated costs for the mitigation stipulations. DOE shall submit on an annual basis, through established channels, appropriate budget requests to the Director of the Office of Management and Budget that adequately address agreed upon schedules for implementation of the final MOA. The stipulations identified in the MOA shall be recognized by DOE as measures necessary to comply with the NHPA. The completion of all stipulations contained in the Final Mitigation Plan is subject to annual Congressional appropriations.



Execution Plan for the Final Memorandum of Agreement

Regarding Site Interpretation of the East Tennessee Technology Park

June 2012

This Execution Plan provides the conceptual description for how the Department of Energy Oak Ridge Office (DOE ORO), Office of Environmental Management (EM) will manage and implement the Stipulations in the "Memorandum of Agreement Among the U.S. Department of Energy, the Tennessee State Historic Preservation Office, the Advisory Council on Historic Preservation, the City of Oak Ridge, and the East Tennessee Preservation Alliance Pursuant to 36 CFR Part 800.6(b)(2) Regarding Site Interpretation of the East Tennessee Technology Park (ETTP), on the Oak Ridge Reservation, Roane County, Tennessee." The descriptive information, estimate and schedule provided herein are directly supportive of the Stipulations documented in the final Memorandum of Agreement (MOA).

EM will manage this effort as described below in accordance with the MOA. The proposed implementation scope is organized into the following seven Work Breakdown Structure (WBS) elements: 1.0 Planning & Coordination; 2.0 Building Slab Feasibility Study; 3.0 Interpretation: Design Elements; 4.0 Education and Outreach; 5.0 Equipment and Artifacts Inventory; 6.0 Construction and Installation of Facilities, Equipment, and Exhibits; and 7.0 Historic Documentation.

Also included in this Execution Plan are estimated costs and a schedule. Implementation of the Execution Plan will be no more than five (5) years in duration from the signed MOA, subject to annual Congressional appropriations. (This Execution Plan does not obligate or commit Federal funds, and does not serve as the basis for the transfer of Federal funds. Nothing in this Execution Plan shall be construed as implying that the Congress will, at a later date, appropriate funds sufficient to meet deficiencies. No provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341.)

WBS Scope Element Descriptions

1.0 Planning and Coordination

This planning and coordination WBS element includes the assignment of a Historic Preservation Coordinator (**Stipulation 15**) including the scope to be performed by the Coordinator (**Stipulation 16, 18**), as well as the Grant for the Alexander Inn (**Stipulation 12**).

1.1 K-25 Historic Preservation Coordinator

The key scope item performed in this element includes the assignment of a K-25 Historic Preservation Coordinator (**Stipulation 15**). Within three (3) months from the execution of the final MOA, a Coordinator will be appointed to support the implementation of this Execution Plan.

This WBS element also includes the Coordinator's scope (**Stipulations 15, 16, and 18**), which is comprised of preparation for implementation of all stipulations to the MOA found in this Execution Plan. This work scope includes identification and mitigation of concerns, coordination and tracking of work, preparation of progress reports to be submitted to signatory parties twice per year, beginning six (6) months after execution of the MOA and every six (6) months thereafter until all stipulations have been completed. Also included is the preparation of close-out reports at the completion of each stipulation, and final reporting upon final completion of all stipulations in this Execution Plan, as well as the commitment to seek project funding, project management and oversight.

1.2 Grant for Purchase of Alexander Inn

This WBS element includes DOE's provision of a \$500,000 grant to the East Tennessee Preservation Alliance (ETPA) for purchase and stabilization of the Alexander Inn. This element includes administration of the grant as stated in Stipulation 12 of the MOA.

2.0 Building Slab Feasibility Study

Whether or not the original K-25 building slab can be used for interpretive purposes in the dedicated footprint is a critical component to the overall K-25 Building interpretative effort. The work to address this includes examining and determining the contamination levels on and beneath the slab (**Stipulation 2**) once the remainder of the building has been removed as described in WBS element 2.1.

2.1 K-25 Slab Retention Feasibility Study

As required by Stipulation 2, this WBS element includes a feasibility study for evaluating the feasibility of retaining the K-25 slab. This study will be initiated within 3 months of the completion of the K-25 Building demolition and includes an examination to determine the contamination levels on and beneath the slab as well as quantifying the short- and long-term costs associated with leaving, covering, or removing the slab. If these investigations/evaluations, estimated to take one (1) year from their initiation, determine that the slab can be safely and cost-effectively left in place and directly accessible to the public, the slab will be integrated into a comprehensive design solution for demarcating the building footprint and would be formally dedicated per Stipulation 1.

3.0 Interpretation: Design Elements

This WBS element consists of professional design work that supports the interpretation of the dedicated K-25 footprint (**Stipulation 1**). Comprehensive design solutions for demarcating the building footprint (**Stipulation 3**) will depend on results of the Feasibility Study (addressed in **WBS 2.1, Stipulation 2**). Design efforts will involve procurements and awards to professional subcontracts experienced in historic interpretation and museum design, respectively. To the extent practicable these subcontracts primarily will be fixed-price, and to a lesser extent, fixed-unit-rate. Once the design of the footprint has been finalized pursuant to the considerations of the feasibility study noted in Stipulation 2, described above, the release of further design work will occur for the design efforts associated with the footprint, which include designs for the following structures and features: Equipment Building (**Stipulation 4**), Viewing Tower (**Stipulation 5**), Museum Displays Design (**Stipulation 6**) and the History Center (**Stipulation 8**), which are not dependent on the results of the Feasibility Study.

3.1 Design-Footprint/Facility Conceptual Design

As required by Stipulation 3, this WBS element includes procurement of professionals to prepare an interpretive design solution that will effectively delineate the dedicated site, which includes the comprehensive approaches to initiate the final designs of the Equipment Building (**Stipulation 4**), Viewing Tower (**Stipulation 5**), and the Wayside Exhibits in (**Stipulation 10**).

3.2 Design of Equipment Building

As required by Stipulation 4, this WBS element includes final design of a structure to be known as the "Equipment Building" used to display authentic process gas equipment. This will include the display two Size 2 Cells, similar to the Roosevelt Cell, representative operating floor equipment, Cold War-era equipment consisting of a 0, 00, 000 converter and axial compressors with motors, and one 40 ft centrifuge casing, which will be declassified/decontaminated to enable display. The Equipment Building will be an enclosed space, built to achieve the height of the K-25 Building, with three stories and a basement and recreate a representation of the gaseous diffusion technology contained within the K-25 Building, making the maximum use of available authentic equipment. The objective is to display and configure authentic equipment in a manner that is most representative of operational conditions. The Equipment Building will be of a size sufficient to provide space for ingress, egress, miscellaneous storage, viewing, and interpretation of the equipment and its information materials, and will take into consideration the potential for expansion and the relationship of the structure to the History Center which will be located at the Fire Station, where additional authentic artifacts, oral histories, and other displays will be featured.

3.3 Design of Viewing Tower

As required by Stipulation 5, this WBS element includes final design of a dedicated Viewing Tower. The design team (**Stipulation 3**) will suggest the best location and orientation of the tower, which will be proximate to the History Center (**Stipulation 8**), and have a height adequate to provide a view of the size, scale, and proportions of the K-25 building footprint.

3.4 Museum Displays Design – Exhibits, Artifacts, Brochures and Process Equipment

As required by Stipulation 6, this WBS element includes employing the services of a museum professional to design and layout the interior spaces to be used to interpret the Manhattan Project and Cold War history of the K-25 Site. Designs include the layout of artifacts, exhibits, and displays in the Equipment Building (**Stipulation 4**), History Center (**Stipulation 8**), develop the content for twelve (12) low-profile National Park Service standard-type wayside exhibits (**Stipulation 10**), and develop the historic information content of the self-guided tour brochure (**Stipulation 11**). The Museum Professional and the DOE ORO K-25 Historic Preservation Coordinator shall obtain assistance of the Oak Ridge Heritage and Preservation Association, the Partnership for K-25 Preservation (ORHPA/PKP), and Oak Ridge City Historian ensuring technical and historical accuracy (**Stipulation 17**). ORHPA/PKP and the Oak Ridge City Historian will provide support by reviewing and commenting on the design, equipment layout, exhibits, and interpretation proposed for the Equipment Building and the History Center; provide information on the selection, display, and interpretation of diffusion equipment, artifacts, timeline, models, photos, and other presentation items; collaborate in developing wayside markers, the self-guided tour brochure, and similar interpretive measures; and provide other support as requested by DOE.

The Museum exhibits will be designed to utilize authentic equipment, artifacts, oral histories, and other media.

3.5 Design K-25 History Center

As required by Stipulation 8, this WBS element includes preparation of the K-25 History Center. The History Center display designs will be developed by a museum professional (**Stipulation 6**) with support from ORHPA, PKP, and the City of Oak Ridge Historian (**Stipulation 17**) and others as described in the Final MOA and Mitigation Plan. The History Center will provide space to exhibit authentic artifacts and other media to facilitate access to oral histories, film and video, and access to the K-25 Virtual Museum (**Stipulation 9**).

4.0 Education and Outreach

This work includes outreach efforts to foster public education and awareness of the K-25 Site's history. The two major efforts that underpin this are the design and development of a Virtual Museum (**Stipulation 9**) as well as the preparation and publication of the Self-Guided Tour Brochure (**Stipulation 11**).

4.1 Web Design/Build and Launch of Virtual Museum

As required by Stipulation 9, this WBS element includes the design and development of a web-based Virtual Museum. Procurement for the K-25 Virtual Museum development services will be initiated no later than six (6) months after execution of the MOA. An outline of proposed features will be prepared no later than three (3) months after procurement. Updates on the progress of the K-25 Virtual Museum development, including details on the hosting and maintenance of the Virtual Museum, will be provided in the semi-annual status reports to be prepared by the K-25 Historic Preservation Coordinator (**Stipulation 15**). A preview of the K-25 Virtual Museum will be offered to the consulting parties no later than eighteen (18) months after procurement, and the formal launch of the K-25 Virtual Museum will occur no later than six (6) months after the preview, so long as, for both preview and launch, any necessary security, classification and/or cyber-security reviews of the K-25 Virtual Museum materials have been completed.

4.2 Prepare & Publish Self-Guided Tour Brochure

As required by Stipulation 11, this WBS element includes design and preparation of a Self-Guided Tour Brochure for ETTP and its immediate surroundings. The Brochure, which will supplement the wayside exhibits described in Stipulation 10, will include a map of the site area, photographs of the site over time, a map of the wayside exhibit locations, and other points of interest, such as the site of the K-25 Building, History Center, Viewing Tower, and the Equipment Building. One thousand (1,000) copies of the brochure will be available no later than one (1) year of the opening of the History Center.

5.0 Equipment and Artifacts Inventory

This work includes conducting an equipment and artifacts inventory (**Stipulation 7**) as well as obtaining and preparing Process Equipment prior to installation for display and interim storage (**Stipulation 4**)

5.1 Equipment and Artifacts Inventory

As required by Stipulation 7, this WBS element includes performing a final inventory and review of all equipment identified for preservation in prior MOAs for the ETTP site, which will include the equipment and materials collected to date and those not yet collected. The inventory and review will be conducted by a team that includes a museum professional, a historian who meets the Secretary of the Interior's Historic Preservation Professional Standards, a photographer, subject matter experts with information about the history and use of particular artifacts, and a DOE representative.

The inventory and review will determine the most appropriate and feasible equipment and artifacts to display in the Equipment Building (Stipulation 4) and in the K-25 History Center (Stipulation 8) and possibly elsewhere. The completed inventory listing, which will identify the items to be retained, will be provided to the SHPO and the ACHP..

Equipment and materials selected for retention by DOE will be set aside and prepared for display according to a schedule that will enable their timely relocation to either the Equipment Building or History Center once the destination facility is available to receive the items.

Items not immediately selected for display but wanted for later rotation into displays will be retained. Equipment and artifacts not selected for retention and/or display may be offered to third parties, both Federal and non-Federal, such as the NPS, the Smithsonian, or others for use in their museum collections, consistent with 41 *CFR* § 109 *et seq.* The American Museum of Science and Energy is considered a third party for purposes of the excess equipment and artifacts.

5.2 Process Equipment – Obtain, Decontamination, Display Preparations & Interim Storage

As required by Stipulation 4, this WBS element includes the preparation of the process gas equipment, which includes two Size 2 cells, similar to the Roosevelt Cell, representative operating floor equipment, and Cold War-era equipment consisting of a 0, 00, and 000 converter and axial compressors with motors, and one 40-ft centrifuge casing with all being declassified/decontaminated to enable display. Also included is the interim storage of the equipment and artifacts pending installation for display in each of the facilities (executed in WBS element 6.0, Stipulation 4).

6.0 Construction and Installation of Facilities, Equipment and Exhibits

This WBS element includes the construction and installation of the numerous preservation-related designs described in WBS element 3.0, Interpretation: Design Element. In some instances, such as with the structure for the process gas equipment, the Viewing Tower, K-25 History Center and the wayside markers, there will be fabrication and procurement costs as well. This WBS element consists of field work activities based on the final approved designs.

Construction work will be competed and performed by subcontractors, where possible. To the extent practicable these subcontracts will primarily be fixed-price, and to a lesser extent, fixed-unit-rate.

6.1 Equipment Building Completion

As required by Stipulation 4, this WBS element includes the construction of an "Equipment Building" per the design produced under WBS element 3.2, Design of Equipment Building. This work also includes installation of associated process gas equipment. It is intended that the Equipment Building will open to the public no later than four (4) years of MOA's execution.

6.2 Viewing Tower Construction

As required by Stipulation 5, this WBS element includes construction of a Viewing Tower per the design produced under WBS element 3.3, Design of Viewing Tower. It is intended that the Viewing Tower will open to the public no later than four (4) years of MOA's execution.

6.3 K-25 History Center Construction

As required by Stipulation 8, this WBS element includes the construction of the History Center per the design produced under WBS element 3.5, Design K-25 History Center. Included is installation of exhibits, artifacts, and display case set-up.

6.4 Installation of Wayside Exhibits

As required by Stipulation 10, this WBS element includes the procurement, assembly and installation of twelve low-profile National Park Service standard wayside exhibits per the design produced under WBS element 3.4, Museum Displays Design. Installation of all of the wayside exhibits will be coordinated to enable them to occur within one (1) year of the opening of the History Center.

7.0 Historic Documentation

This WBS element includes the preparation and execution of Level I Historic Documentation (**Stipulation 13**) and creation of an unclassified post-World War II document reference list as well as consideration of future classified documentation for declassification (**Stipulation 14**).

7.1 Level I Historic Documentation

As required by Stipulation 13, this WBS element includes Level I Historic Documentation which includes a written description and history, archival-quality photographs, historic photographs and drawings developed to meet the requirements of the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation for the entire K-25 Building (including what has already been demolished), the K-1037 Building and K-1028-54 (Portal 4). Coordination with the NPS on the documentation for the K-25 Building will begin no later than nine (9) months after MOA execution, with coordination on the K-1037 and K-1028-54 Buildings beginning no later than eighteen (18) months after MOA execution.

7.2 Unclassified Reference List and Potential Declassification

As required by Stipulation 14, this WBS element includes a reference list of DOE's available unclassified documents on the K-25 Building activities post-World War II and DOE's research of its inventory of classified documents to be considered for potential future declassification. The reference list will be provided within one (1) year of execution of the MOA.

Conclusion:

Funding for the mitigation measures described in this plan will be subject to Congressional appropriations, and may impact the implementation schedule. Subsequent annual funding requests will correspond to the conceptual cost estimate summary attached to this Execution Plan.

Once the MOA is signed, DOE EM will begin execution of portions of the stipulations identified in the MOA, as listed in the attached schedule. Scope elements to be initiated will be dependent on funding availability and timing from the signed MOA. Scopes potentially available to be executed are as follows:

- Provide a \$500,000 grant to the East Tennessee Preservation Alliance (ETPA) to purchase and stabilize the Guest House/Alexander Inn. (Based on execution of the MOA, and prior to the end of fiscal year 2012).
- Appointment of the K-25 Historic Preservation Coordinator, within three (3) months of execution of the MOA

- Potential scopes to be executed include various conceptual designs that may be initiated as funding allows, which may include the following: Viewing Tower, Equipment Building to house the Process Gas Equipment, coordination regarding the work for the design of the History Center, as well as the web-based Virtual Museum.

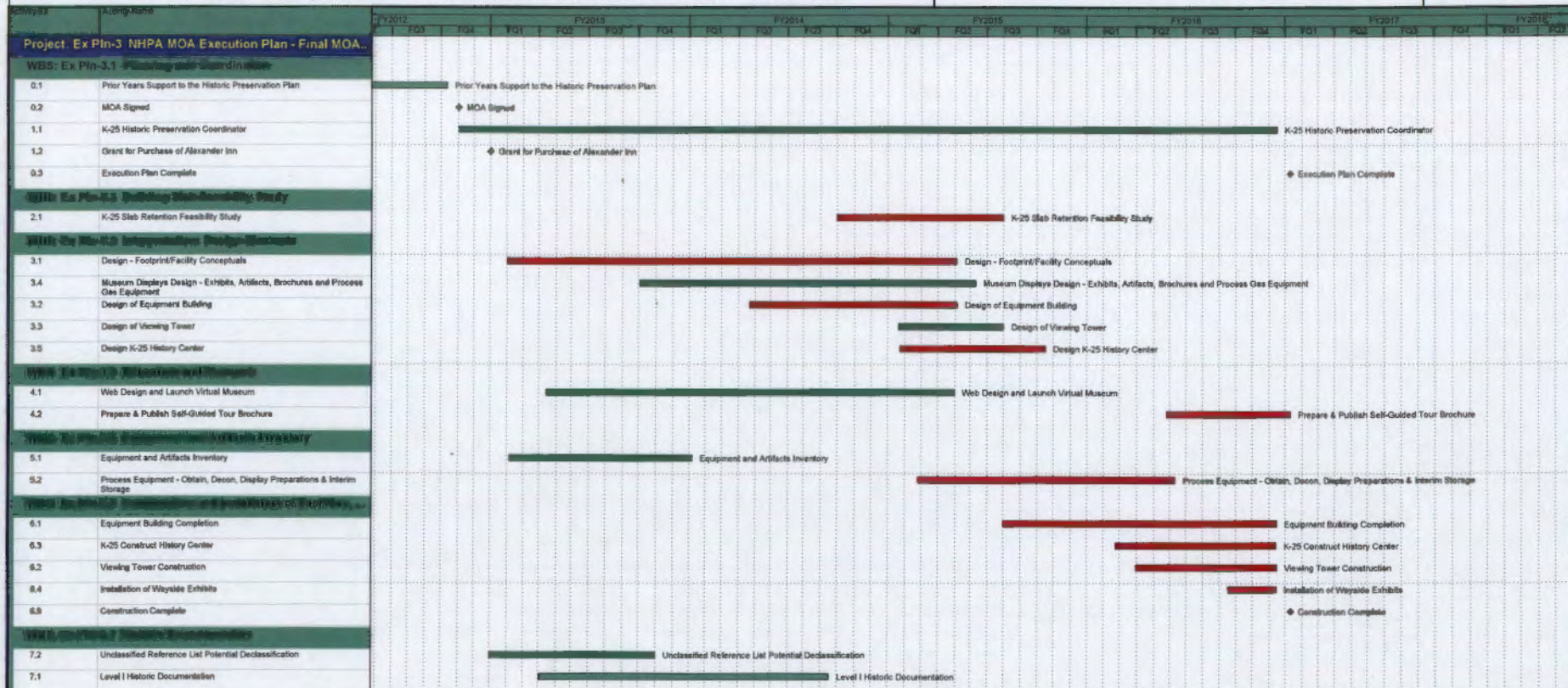
MOA Execution Plan Total Estimated Cost

DOE has expended approximately \$3 million on K-25 mitigation measures. In addition to the \$3 million, the estimate for implementing the mitigation measures in the Final MOA, to which this Execution Plan is appended, total approximately \$17.5 million, bringing the total conceptual estimated cost to \$20.5 million. A final decision has not been made regarding which elements will be managed by DOE directly and which will be managed by a contractor. The attached cost estimate does not include the overhead costs (e.g., project integration, planning and controls, information technology, quality assurance, document control, etc.) that would be incurred if the work was managed by a DOE contractor.

DOE ORO ETPP Site Interpretation Final MOA Execution Plan Schedule

East Tennessee Technology Park

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Oak Ridge LLC

Execution Plan Rough Order of Magnitude (ROM) Cost Estimate, by Fiscal Year
for the Final Memorandum of Agreement
East Tennessee Technology Park
June 2012

WBS	Description	Unescalated Total \$ Cost	Fiscal Year (Unescalated \$)					Unescalated Total \$ Cost
			12	13	14	15	16	
1.1	K-25 Historic Preservation Coordinator	0						0
1.2	Grant for Purchase of Alexander Inn	500,000	500,000					500,000
2.1	K-25 Slab Retention Feasibility Study	120,000			120,000			120,000
3.1	Design - Footprint/Facility Conceptuals	351,000		143,000	156,000	52,000		351,000
3.2	Design of Equipment Building	1,802,400			1,351,800	450,600		1,802,400
3.3	Design of Viewing Tower	225,300				225,300		225,300
3.4	Museum Displays - Exhibits, Artifacts, Brochures and Process Equipment	265,000		50,476	151,429	63,095		265,000
4.1	Web Design/Build and Launch of Virtual Museum	150,000		61,364	81,818	6,818		150,000
4.2	Prepare & Publish Self Guided Tours Brochure	7,000					7,000	7,000
5.1	Equipment and Artifacts Inventory	211,000		211,000				211,000
5.2	Process Equipment - Obtain, Decon, Display Preparations & Interim Storage	2,646,000				882,000	1,764,000	2,646,000
6.1	Equipment Building Completion	8,562,000				4,532,824	4,029,176	8,562,000
6.2	Viewing Tower Construction	751,000					751,000	751,000
6.3	K-25 History Center	1,440,000					1,440,000	1,440,000
6.4	Installation of Wayside Exhibits	36,000					36,000	36,000
7.1	Level I Historic Documentation	505,500		168,500	337,000			505,500
ESTIMATE TOTALS		\$ 17,572,200	\$ 500,000	\$ 634,340	\$ 2,198,047	\$ 6,212,637	\$ 8,027,176	\$ 17,572,200