

Ray Smith

Y-12 Historian

An employee of B&W Y-12 LLC, the managing and operating contractor for the Department of Energy National Nuclear Security Administration's

Y-12 National Security Complex in Oak Ridge, TN

TESTIMONY

for

Subcommittee on National Parks, Forests and Public Lands

on

H. R. 5987,

A BILL TO ESTABLISH THE MANHATTAN PROJECT NATIONAL HISTORICAL PARK IN OAK RIDGE, TENNESSEE, LOS ALAMOS, NEW MEXICO, AND HANFORD, WASHINGTON.

This testimony does not represent the views of the United States Department of Energy or the National Nuclear Security Administration.

June 28, 2012

Ray Smith Testimony – H. R. 5987

June 28, 2012

Mr. Chairman and Members of the Committee, it is my pleasure to have been invited by to testify on H. R. 5987, a bill to establish the Manhattan Project National Historical Park in Oak Ridge, Tennessee, Los Alamos, New Mexico and Hanford, Washington. I also want to thank Congressmen Doc Hastings, Chuck Fleischmann and Ben Lujan, sponsors of this bill.

I am Ray Smith, the B&W Y-12 Historian at the Y-12 National Security Complex in Oak Ridge, TN.

My career at Y-12 spans 41 years, much of that time spent managing the maintenance and support of production operations at the nation's Uranium Center of Excellence, the Y-12 National Security Complex. Over time, I have had maintenance responsibility for every building on the site.

For the past six years, I have been the B&W Y-12 Historian and have focused my energies on helping to capture the heritage of Y-12 and present it in ways that Y-12 employees as well as the public can appreciate. The Y-12 History Center, multiple video documentaries, video oral histories and weekly newspaper articles have been among the varied mediums and methods I have used.

My relationship with the concept leading ultimately to this bill began prior to the special resource study on several Manhattan Project sites for possible inclusion in the National Park System. National park status for Oak Ridge has long been a dream of historians in the East Tennessee area. We understand the value the National Park Service brings to an area's history - they understand how to properly interpret the people stories and the significant cultural influences.

In the midst of Appalachia in East Tennessee, in 1942, General Leslie R. Groves and his Manhattan Project transformed Bear Creek Valley, Bethel Valley, Black Oak Ridge and East Fork Valley into a 60,000 acre military industrial experiment like none other ever conceived in the history of the world. First ever experiments soon were just run of the mill industrial activities and separating Uranium 235, something the rest of the scientific world knew was possible, but did not have the resources to accomplish, was being routinely done on a huge scale, using young women right out of high school!

Those "Calutron Girls" represents but one of the amazing historical stories that exist in the Manhattan Project history. The "Calutron" itself, simply a name taken from "**California University Cyclotron**" as it was invented by Ernest Lawrence of the Radiation Laboratory at Berkley CA, can be explained simply and once understood puts the whole process of uranium separation within the grasp of even young children, as I have seen in classrooms with fourth grade students.

The Manhattan Project National Historical Park is about the feats of scientific and engineering accomplishments developed at a unique time in the history of our country. Our back was against the wall, the world was at risk by a war that had grown into a worldwide conflagration. The Manhattan Project National Historical Park will tell all sides of the story of what occurred at Oak Ridge, Los Alamos and Hanford as well as Japan.

At Y-12 there are two buildings that contain Manhattan Project electromagnetic separation equipment and artifacts. If a number of issues surrounding them can be successfully addressed such as cost, feasibility and security related issues, eventually both these buildings may potentially be considered as candidates to be included in the Manhattan Project National Historical Park.

First, Building 9731, the first building completed on the site and used as the Radiation Laboratory's Pilot Plant with two large Alpha (first stage) electromagnetic separators and two Beta (second stage) electromagnetic separators. The building holds two sets of huge magnets that have been designated as Manhattan Project Signature artifacts and has become a symbol of Y-12's heritage.

Second, Building 9204-3, also known as "Beta 3," designated by the Department of Energy as a Manhattan Project Signature Facility, is one of nine large buildings constructed during the Manhattan Project to house the Alpha and Beta Calutrons.

The magnets of four Calutrons in Building 9731 remain, have been recently repainted, and the entire building is being restored to its original condition. A tour route has been created through the building that features both sets of magnets as well as three nuclear weapons trainers and a display glove box allowing docents to bring the history of Y-12's missions alive for the tour participants.

The two Alpha magnets in Building 9731 are the only ones that exist and stand well over 20 feet tall. Standing next to the huge magnets can give the visitor an overwhelming feeling of the power contained in the world's largest magnets at the time that once contained 67 tons of silver in the windings because of a shortage of copper during the war.

Both of these buildings are located inside the Y-12 National Security Complex and at present are only accessible with special security arrangements. Both have been visited by the public, with special arrangements, and without exception, the visitors have been amazed at the authentic "1945 atmosphere" of being near the actual equipment inside the actual buildings of one of the sites where the world's most significant technological advancement took place.

Visiting Building 9731, having already been prepared as a tour site that is routinely accessed by Y-12 business related tours, special school groups, area leadership groups, elected officials and official visitors, is like stepping back in time to 1945. It is also open to the public through tours provided by Y-12 as part of Oak Ridge's Secret City Festival on Saturday of the third weekend in June of each year.

This past year, the third year of the building being included in the Y-12 public tour on Saturday of the festival, there were 739 visitors from 22 states. Reaction by the visitors remained highly complimentary for the opportunity to visit an authentic World War II relic facility and one with a Cold War and medical isotope association as well.



Building 9731, Y-12's Pilot Plant



Y-12's Alpha Calutron Magnets

Building 9204-3 (Beta 3) is less accessible at present than is Building 9731, as it is located in a more secure portion of the site. It contains more authentic equipment and larger historic displays including a Calutron simulator as well as examples of actual working control rooms, standby electromagnetic separators, cleaning stations and all necessary support that was used to maintain the World War II equipment in operation until 1998 separating stable isotopes and remaining in standby today. This building is currently not available for public access and may not be available for a number of years because of the complexity of the issues to be resolved, the potential high cost of preparing the facility for park status and other uncertainties. In fact the security access issue may be resolved before other potentially more costly issues can be successfully addressed.

Additionally, Y-12 has the Y-12 History Center in the New Hope Center. This modern history museum and exhibit display area is being remodeled. The facility is being converted from an open space where historic artifacts have been on display for the five years the New Hope Center, Y-12's official Visitor Center and public access area, has been in existence, to a new museum and multipurpose media room.

The major renovation is complete. A request for proposals is being created for the museum exhibits to be designed and installed. A theme that coincides with the recently completed documentary film series, *A Nuclear Family*, is being used to feature the highlights of Y-12's history in interactive video based exhibits.

The new museum contains the *John M. Googin Y-12 History Research Library*, the *Ed Westcott Video Theater* and a large artifact exhibit area. A large timeline mural is being installed in the main entrance lobby and will include the media room and history center in the same theme.

Artifact displays and video stations are also included in the side lobby and atrium making the New Hope Center a central display area for Y-12 history. This public access area including the Y-12 History Center can immediately be included in the Manhattan Project National Historical Park attributes.

Y-12 is important to the Manhattan Project National Historical Park because it is one of a set of Manhattan Project elements located in close proximity in East Tennessee. In addition to Y-12 there are two other major Department of Energy facilities in Oak Ridge, TN.

The X-10 site, or the Oak Ridge National Laboratory and the K-25/East Tennessee Technology Park site exist today. A fourth site (S-50) existed during the Manhattan Project only. The city of Oak Ridge is also an integral part of the history of the Manhattan Project in East Tennessee and all together these sites and the city form the basis of the reason to locate a portion of the Manhattan Project National Historical Park here in East Tennessee.

My primary focus for this testimony is Y-12. However, Y-12's presence in Oak Ridge, along with two other Manhattan Project era facilities that are nearby, enhances its historical value.

June 28, 2012

The Oak Ridge National Laboratory, known during the Manhattan Project as “X-10,” is home to The Graphite Reactor, a National Historic Landmark (designated in 1966) that served to prove the principle of producing plutonium in an industrial size uranium reactor. This reactor also functioned until 1963 to produce many of the nation’s medical isotopes and other useful scientific studies and products.

The Graphite Reactor has been designated by the Department of Energy as a Manhattan Project Signature Facility and is a primary candidate to be considered to be included in the Manhattan Project National Historical Park. However, access is limited now and may remain so for some time into the future.

The East Tennessee Technology Park, known during the Manhattan Project as the “K-25 Gaseous Diffusion Plant,” served the nation for 40 years. The plant producing highly enriched uranium that even today remains in the nation’s inventory as well as lower enriched uranium for nuclear power reactors and research reactors around the world.

The highly enriched uranium needed to win the Cold War was produced by the same K-25 process building that has been designated by the Department of Energy as a Manhattan Project Signature Facility. This historic building, largest building in the world under one roof in 1945 at 44 acres, is being demolished and a small section of the building will be replicated on site for inclusion in the Manhattan Project National Historical Park.

A fourth facility, no longer existing (only a pile of bricks that have been saved from the smoke stacks remain) was the S-50 Thermal Diffusion Plant. It was located at the K-25 site near what was the world’s largest steam powered electrical generating plant in 1945. S-50 is credited with shortening World War II by approximately three weeks as it provided slightly enriched uranium feed material to Y-12’s electromagnetic separators or Calutrons.

In addition to the three government sites, the city of Oak Ridge has assets that will contribute to the Manhattan Project National Historical Park. The Guest House/Alexander Inn is among the most historic structures in the Manhattan Project. It is in a sad state of disrepair now, but has been included in the latest draft of a memorandum of agreement for historic preservation of the K-25 site at East Tennessee Technology Park as an alternative historic preservation initiative complimentary to the other historic preservation actions.

Other portions of the historic city of Oak Ridge may well serve as integral parts or guided tour portions of the Manhattan Project National Historical Park, such as the Chapel on the Hill (first church), alphabet houses, Midtown Community Center, Jackson Square Town Site, the Children’s Museum of Oak Ridge, the Oak Ridge Public Library’s Oak Ridge Room and Center for Oak Ridge Oral History and the especially appropriate American Museum of Science and Energy.

The museum has been the mainstay of Oak Ridge Manhattan Project and other related history exhibits since March 19, 1949, when the secret city of Oak Ridge was opened to the public for the first time as the gates to the main roads were removed. That same day, the American

Ray Smith Testimony – H. R. 5987

June 28, 2012

Museum of Atomic Energy, as it was known until 1978, opened its doors for the first time and welcomed visitors.

When the museum moved to its present location it also changed its name to the American Museum of Science and Energy and expanded its mission for exhibits and focus to a broader energy related theme. However, it kept its role as a primary source of Oak Ridge history.

Today, the museum is the hub of tourist activity in Oak Ridge, being the first stop for most visitors and a must stop for all visitors. The museum's Oak Ridge Room is THE place where visitors first understand the unique history of the people who were notified first through a phone call from their Senator Kenneth McKellar to the Oliver Springs High School principal telling him to tell the students to go home and tell their parents about the coming changes in their neighborhoods. Lester Fox, still living today, swears that is the way the 3,000 people living in New Hope, Robertsville, Elza, Scarboro and other small communities in this area first learned that 60,000 acres would be used for the Manhattan Project that would become Oak Ridge.

The Manhattan Project National Historical Park, Oak Ridge location, will need a central location for operations. At present the American Museum of Science and Energy has been designated by the Oak Ridge Convention and Visitors Bureau's June 2007 heritage tourism master plan, *Creating the Living Story of "The Secret City,"* as the recommended hub of a "hub and spoke" strategy for the city and government sites heritage tourism.

A more recent recommendation by the city has a combination of a new facility that would tie the Oak Ridge Public Library and the American Museum of Science and Energy into a single comprehensive Manhattan Project National Historical Park Interpretive Center. This concept is being studied and funding sought to realize the full potential of the Manhattan Project National Historical Park's presence in Oak Ridge.

Additional features in Oak Ridge already functioning with history related aspects that would complement the Manhattan Project National Historical Park are the Secret City Commemorative Walk – a self guided walking tour of plaques describing the seven years that Oak Ridge remained a "Secret City," the Children's Museum of Oak Ridge with its Ed Westcott Room of photographs that display the history of early Oak Ridge and the International Friendship Bell.

The Secret City Commemorative Walk is centrally located near the Oak Ridge Public Library and the American Museum of Science and Energy as is the International Friendship Bell and are all in easy walking distance. The Children's Museum of Oak Ridge is located near the center of the city atop Black Oak Ridge at the corner of Highland Avenue and West Outer Drive.

Additionally, the city of Oak Ridge was designated as a Preserve America Community by the National Park Service in 2006. This designation is proudly displayed on signs at key locations within the city. Recently the city and the Oak Ridge Heritage and Preservation Association completed a project that commemorates the "Birth of the City: The History of Oak Ridge, Tennessee" by installing four large historical plaques near the entrance of the city's municipal building that explain the process used to establish the City of Oak Ridge government.

June 28, 2012

All these attributes are cited to illustrate that Y-12 exists within a much larger context. Oak Ridge has prepared the way for the Manhattan Project National Historical Park and is ready to move to the next level of heritage tourism. The Department of Energy has the responsibility to interpret the history of the sites where they have served the nation's various needs over the years, but the National Park Service has the expertise to do this task well. Therefore the partnership being formed in the Manhattan Project National Historical Park will demonstrate the value of such partnerships.

Additionally, the Park Service is venturing into the Science, Technology, Engineering and Mathematics (STEM) education by directive of a recent study indicating the mission of the 21st Century National Park Service should move in the direction becoming more of a contributor to practical learning and education. The Manhattan Project National Historical Park may well become the cutting edge of this new direction of the park service. We already have a great start at Y-12 and welcome the challenge to be the pacesetter for change toward STEM educational support in practical and tangible methods that involve the actual locations where the world's most significant scientific accomplishment took place, and where much is still taking place today.

The history of Y-12 can be fully utilized by bringing students to the site of the most historic technological achievements in the history of the world to understand STEM education! With the inclusion of the other DOE sites and the cities of Oak Ridge, Los Alamos, and Hanford, this is far beyond the realm of a standard national park and the Manhattan Project National Historical Park may become the national park of the future.

The recently completed congressionally authorized National Park Service study recommended that the best way to preserve and interpret the Manhattan Project and resulting technological advances is for Congress to establish a national historical park at the three sites where much of the critical scientific activity associated with the project and later advances occurred: Oak Ridge, Los Alamos and Hanford.

As Congressman Doc Hastings declared, "There is a sincere and shared desire by Chairman Bingaman, Senators Murray and Cantwell, and our colleagues to establish the Park, and we'll continue working together with local advocates to accomplish our goal of ensuring these remarkable pieces of our history are preserved to tell the story of the Manhattan Project."

This comment represents substantial interest in what may well be the single most significant scientific and industrial event in the entire history of the world. The locations where it occurred are being recognized for their contributions through this legislation to create a Manhattan Project National Historical Park.

Oak Ridge Mayor Tom Beehan, Chairman of the Energy Communities Alliance has included in his statement to the Senate hearing on S-3300, "Among the biggest advocates of the National Historical Park are the people who worked at the three sites during World War II. It is important to remember that no one in our country knew what the workers were building at the sites--they were truly "Secret Cities." Most of the young men and women working in these communities

Ray Smith Testimony – H. R. 5987

June 28, 2012

did not even know what the project was. These were among the nation's best and brightest citizens from all walks of life.”

Beehan continued, “National Historical Parks are developed to ensure that we protect our country's assets and open them to the public to learn about our nation's history. We should work to open this park while some of the Manhattan Project Veterans are still alive and able to see the recognition of their work recognized by our nation. These people played a valuable role in ending World War II and defending not only the United States but also democracies throughout the world. These true heroes, who dedicated their wartime service to the Manhattan Project, appreciate the legislation developed by your committee.”

The National Park Service interprets all historical sites and attempts to address all view-points to give a full and fair picture and we in Oak Ridge support such actions by the National Park Service. We look forward to the FULL STORY of the Manhattan Project and its subsequent technological advances that have impacted our daily lives being interpreted in the most effective manner possible.

Y-12 is an important part of the proposed Manhattan Project National Historical Park, and the legislation could serve as a 21st Century model for the National Park Service, one that is based on federal, state and community partnerships. We in Oak Ridge look forward to working together with all the parties involved in the Manhattan Project National Historical Park.

Sincere appreciation is again extended to Congressman Chuck Fleischmann for his kind invitation to testify before this subcommittee and also for his sponsorship of the Manhattan Project National Historical Park Bill, H.R.5987.