

## **The Manhattan Project National Historical Park potential sites at Hanford, WA, part 2**

(As published in *The Oak Ridger's Historically Speaking* column on September 1, 2014)

Continuing to recount our experiences the week of July 21, 2014, when Fanny and I journeyed to Hanford, WA, to explore the future Manhattan Project National Historical Park potential sites there.

Our tour started at the Manhattan Project B Reactor Hanford, WA Tour Headquarters building on the outskirts of Richland, WA. Fanny and I arrived early and were able to see the B Reactor public tour gathering for the pre-tour briefing. I have to admit that I felt jealous that they were able to provide these tours all year long and that they had a special building for their tour headquarters.

In Oak Ridge, we must use the American Museum of Science and Energy as the tour headquarters and our public tours only run from June through August. A request has been submitted to DOE to extend our tours to run most of the year. As I write this, I have just received feedback from that indicates a positive response may be forthcoming!

I also saw a review written by Raina Regan about her recent road trip to visit Oak Ridge: [http://blog.preservationnation.org/2014/08/26/road-trip-secret-city-atomic-history-oak-ridge-tennessee/#.U\\_6in\\_IIdXNk](http://blog.preservationnation.org/2014/08/26/road-trip-secret-city-atomic-history-oak-ridge-tennessee/#.U_6in_IIdXNk). She took the DOE Public Tour and visited our American Museum of Science and Energy as well as toured the historic "Townsite" or Jackson Square portion of our city. The review reflects proof of much of what I am trying to convince us to appreciate about Oak Ridge!

Okay, now back to the Hanford Site tour...I can easily get on my soap box about AMSE!

We allowed the B Reactor public tour bus to load and leave before our special and personal tour began. We were loaded into an SUV and set out on our day's journey. To put this tour into proper perspective, you need to understand that the Hanford Site consists of 586 square miles, which is about the same size as half of the state of Rhode Island. For comparison, Oak Ridge is approximately 90 square miles less than 15% the size of Hanford!

Rattlesnake Mountain is 3,600 feet high and is the highest mountain in the United States without any trees on it. The last part of the Columbia River that doesn't have a dam on it is at Hanford. That is the 51-mile stretch of water called a "reach" of water...thus the name for the REACH Museum featuring this section of the mighty free-flowing Columbia River on the Hanford Site. The REACH National Monument was created in 2000.

Two towns, Hanford and White Bluffs, were located on the land that is now the Hanford Nuclear Reservation. All the townspeople had to leave their homes when the Manhattan Project effort to produce plutonium took the land.

Today, there are only three buildings still standing from these two towns. The Hanford High School is the last building standing in old Hanford. At White Bluffs, the last building still standing is the old White Bluffs Bank which is undergoing restoration. The Bruggemann warehouse still remains at the original family homestead and is an amazing rock constructed structure with faces made of uniquely shaped rocks on the chimney.

We visited all these potential Manhattan Project National Historical Park remaining structures. They form a unique story of the Hanford Site.

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Additionally we visited the B Reactor, which is the primary visitor attraction with tours filling almost immediately when they are posted online. Over \$3 million has been spent to upgrade the reactor building in preparation for the large number of visitors they are now experiencing.

The B Reactor was constructed in secrecy and in a hurry starting in October 1943 and was completed in September 1944, just 11 months later. Operation began when Enrico Fermi and a team of engineers started the reactor on September 27, 1944.

The B Reactor operated until February 1968, except for a two-year period beginning in March 1946. The B Reactor is said to be the world's first large-scale nuclear reactor. The fact sheet for the B Reactor states, "Although somewhat similar to the X-10 Graphite Reactor at Oak Ridge, Tennessee in terms of loading and unloading fuel, B Reactor was built on a much larger scale and used water rather than air as a coolant."

The fact sheet continues, "The X-10 had an initial design output of 1,000 kilowatts, the B Reactor was designed to operate at 250,000 kilowatts. Consisting of a 28 by 36-foot, 1,200-ton pile of graphite blocks, the reactor was penetrated horizontally by 2,004 aluminum tubes. More than three hundred tons of uranium slugs the size of rolls of quarters and sealed in aluminum cans went into the tubes."

There were three original reactors built along a six mile section of the Columbia River during the Manhattan Project which produced the plutonium used in the Trinity device, the Nagasaki weapon and contributed to the Cold War. Six more plutonium production reactors were later built at Hanford to support the large amount of plutonium production for the Cold War.

The combination of the uranium produced in the gaseous diffusion plants in Oak Ridge, TN, Paducah, KY, and Portsmouth, OH, and the plutonium production of the nine reactors in Hanford, changed the global balance of power for all time. The United States emerged from the World War II as a nuclear power and a world leader and through winning the Cold War established itself as the primary world power leader.

The B Reactor, as it is now open to the public on a routine tour basis, allows the public to better understand and appreciate the role Hanford has had in creating the world we live in today. The size of the face of the reactor will astound the visitor when they walk in the room...it sure did me and I thought I was prepared for it. Climbing to the top of the huge reactor further impressed me of the massive size of the reactor.

It makes me think that we here in Oak Ridge have a Graphite Reactor and Beta 3 Calutrons as well as Building 9731 with its Alpha Calutron magnets (the ONLY ONES IN THE WORLD!) and the K-25 footprint. We hope to figure out how to provide routine access to the public to promote Heritage Tourism and thus a better understanding of our historic heritage. Hanford has it figured out, maybe we can too? The efforts now being initiated at K-25 give me considerable hope!

With the passage of the Manhattan Project National Historical Park bill pending in the Senate, more study may bring to light the importance of these unique artifacts in association with the park. The park headquarters hub to be located in the city that will include the American Museum of Science and Energy and maybe even the Oak Ridge Room of the Oak Ridge Public Library with tours of Jackson Square, The

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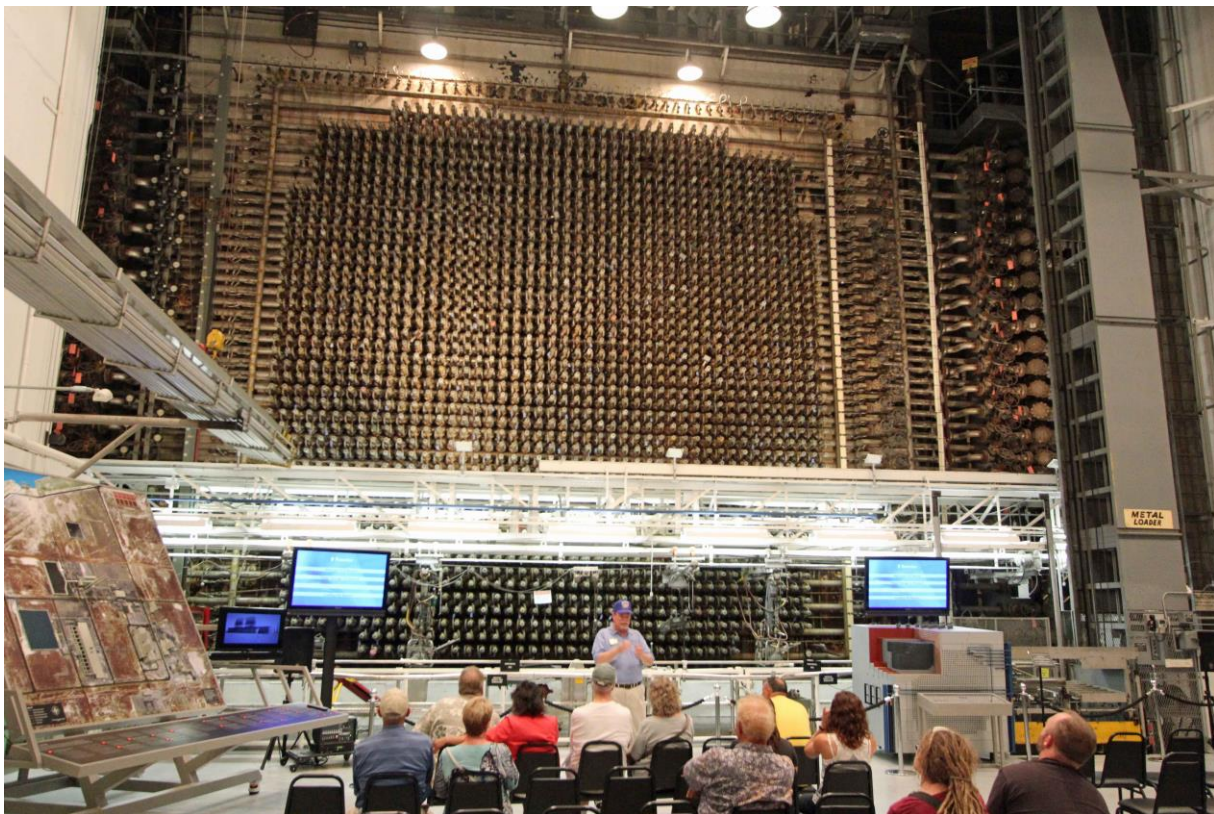
Guest House lobby, examples of alphabet houses in addition to the federal sites may help us recognize the economic development value of Heritage Tourism.

Gary Petersen, of the Tri-Cities Development Council in Kennewick, WA, has an economic development study that shows the value of National Parks to the regions where they are located.

[http://www.nature.nps.gov/socialscience/docs/NPSVSE2013\\_final\\_nrss.pdf](http://www.nature.nps.gov/socialscience/docs/NPSVSE2013_final_nrss.pdf)

So, the future looks bright for Oak Ridge, in my opinion. Regarding our ability to capitalize on our heritage and to create economic growth from the history here in Oak Ridge, we just have to take the action. We can do it just as it has already been done to some degree at the Hanford Site. We just need to focus on developing those assets we have.

I believe we should move ahead **now** and when the national park becomes a reality, we will already be moving in the direction of an effective Heritage Tourism implementation. All of the experts who look at our tremendous heritage and studies that have been completed about Oak Ridge's potential for Heritage Tourism indicate that we have a gold mine of opportunities. Let's just do it!



The B Reactor face with a tour group learning the details of plutonium production



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Fanny and I were able to actually stand on the top of the B Reactor



The B Reactor exterior

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B Reactor is a National Historical Landmark



The Bruggermann structure a unique pre Manhattan Project ranch building



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The White Bluffs Bank



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Hanford High School

Caption: IMG\_0380asfebsc.jpg:



The 1908 Hanford Irrigation Project Pump House