

THE

# MODERATOR



B REACTOR MUSEUM ASSOCIATION

January—March

Vol. 21, Issue 2

Spring 2015

## From The Control Room

by Maynard Plahuta, BRMA President

Entering the second quarter of this year will be an exciting time as we witness the evolution of the Manhattan Project National Historic Park (MPNHP). B Reactor is certainly a key element of the Park here at Hanford as well as the entire Park including Oak Ridge and Los Alamos. In addition, T Plant and the limited existing pre-Manhattan Project facilities are a huge part of the Hanford Manhattan era history. In telling that history we must never forget the sacrifices local farmers, business owners and townspeople made for the benefit of our entire nation.

BRMA is expected to play a significant role in establishing the Park at Hanford. The wealth of knowledge, expertise, and experience of BRMA members will help the National Park Service (NPS) and DOE as they develop plans and interpretation features. This capability will be shared with NPS staff when they visit the Hanford site this month and will continue through this year and for the next five or more years. We eagerly look forward to collaborating with NPS and DOE to make the Park informative and thriving.

As noted NPS personnel will be visiting Hanford this month. BRMA and the entire Tri-City community welcome that visit with enthusiasm. NPS is visiting to help kick off the Park planning process here at Hanford. A full day NPS tour of B Reactor and the pre-Manhattan facilities will be on April 14. This tour will provide the NPS with a good understanding of the significance of all Hanford facilities, including the pre-Manhattan facilities, and their significance in interpreting the Manhattan history at Hanford.

On Wednesday, April 15, NPS and DOE are holding a public open house on the Manhattan Project National Park. Their purpose is to help kick off the Park planning process here at the Hanford Site. The open house will be at the PNNL Computational Sciences Facility, 3300 Ste-

vens Drive, Richland, from 4:30 p.m. to 6:30 p.m. All BRMA members are encouraged to attend and participate ---wear your BRMA caps to help identify our full support. Please attend if possible. NPS visited Oak Ridge in March and we understand they were impressed by the turnout at that site. BRMA, along with the entire Tri-City community, wants to surpass Oak Ridge with a much larger turnout. It is important that NPS is favorably impressed with the enthusiasm and support our community has for the Park. So again, please attend the open house and visit with the NPS staff.

The local Advocacy Committee will be joining NPS on the April 14 tour. On April 16 the Committee will meet with NPS and give several presentations to further show community support and discuss local participation in the planning process as set forth in the legislation authorizing the Park. John Fox and I are scheduled to make a presentation on behalf of BRMA. I wish to extend my thanks to John, who has done a remarkable job of representing BRMA on the Advocacy Committee. John, representing BRMA, is recognized as a key part of the Committee.

You may have noticed the article in the April 4 *Tri-City Herald* that reported Sen. Maria Cantwell's April 3 visit at an Advocacy Committee meeting in Kennewick. The article stated that BRMA had contributed \$150,000—\$200,000 into developing exhibits at the reactor. That was a quote from me and needs further clarification. The article failed to note the amount stated included grants BRMA received from various sources. When I later checked the actual number I was somewhat surprised that the amount is about \$210,000. The actual BRMA cash contribution for the exhibits and displays over the past years is slightly shy of \$25,000.

In wrapping up this edition of the *Moderator* I ask all to

*(Continued on page 3)*

The B Reactor Museum Assn. meets on the 2<sup>nd</sup> Monday of each month at 7 p.m. in the Richland Public Library, 955 Northgate Drive, Richland  
Our next meeting is Monday, April 13.

## Three Cheers For Colleen French

One and a half years ago, the Declassified Document Retrieval System (DDRS) was dropped from the Hanford.gov website due to the Sequestor. For the past year, Colleen French, DOE-RL Communications has persistently pushed to get the 150,000 historical pictures and documents restored to public access. In February, PNNL added the DDRS to the DOE Reading Room site. Use the following link to access the new and improved Search Engine:

<http://reading-room.labworks.org/Catalog/Search.aspx>

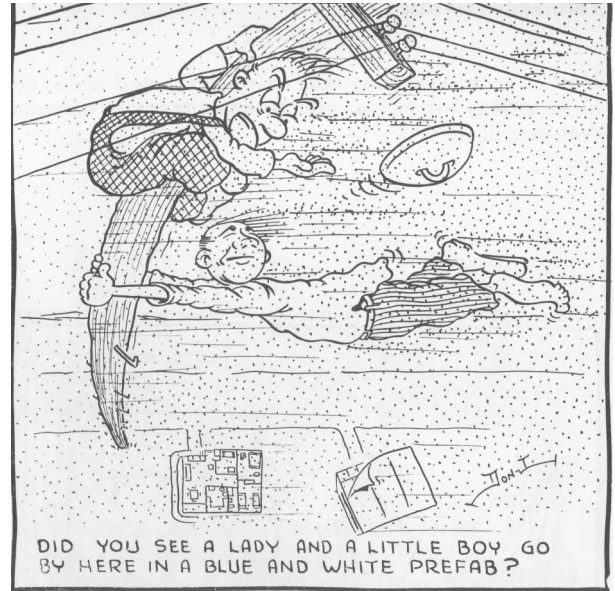
## BRMA Charitable Contributors

This is a Public Acknowledgement of the generous cash contributions to BRMA. The following list covers the period January through March, 2015.

Don Baker  
 Carl Connell  
 Katherine J. Ely  
 Andy Kelly  
 Betty E. King  
 Wanda Munn

Clay Perkins  
 Lloyd Piper  
 Toni Rysdam-Shorre  
 Richard Vivian  
 Gene Weisskopf  
 Gerald Woodcock

## Dupus Boomer—by Dick Donnell



### "Sandstorm"

Contributed by Connie Estep,

Ed. Note: The "roofless" prefab shown was no exaggeration, The Hurricane Force winds of the Great Sandstorm of '47 lifted the roof of the closest southeast end prefab and deposited it across Geo. Wash. Way in the Aerator Pond of the Rose Bowl. *Burt Pierard*

## Membership Report By Burt Pierard, Membership Chair

**2015 BRMA MEMBERSHIP DUES ARE NOW DUE.** Our paid membership is 65 people (1 New) and one Organization (Los Alamos Historical Society).

Anyone who has paid and not received their 2015 Membership Card yet should receive it in a separate mailing. To send in your Renewal, the Form is below to Clip or Print and send in.



## 2015 Renewal and New Member Application

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_ Zip: \_\_\_\_\_

Phone: (h): (\_\_\_\_) \_\_\_\_\_ (w): (\_\_\_\_) \_\_\_\_\_ MSIN address: \_\_\_\_\_  
 (current Hanford employees)

E-mail: \_\_\_\_\_

- Individual (\$20) or  Senior (age 65+) or Student (\$10) and  New or  Renewal  
 Organization (\$25 up to 100 members; please add \$10 for each additional 100 members)

For Organization Membership, Official Representative: \_\_\_\_\_

Additional tax deductible contribution: \$ \_\_\_\_\_ Total Enclosed: \$ \_\_\_\_\_  
 (Tax ID # 94-3142387) (Please make check out to BRMA)

Thank you; please mail this application with payment to:

**B Reactor Museum Association**  
**PO Box 1531**  
**Richland, WA 99352**

# 2015 B Reactor Tour Season Is Under Way

By Bob Horgos, BRMA Tour Coordinator

The Department of Energy set the start of 2015 Hanford Tour registration for Monday, March 9<sup>th</sup>, beginning at 9 a.m. Initially, visitors have a choice of two tours: (1) travel through the Hanford Site with emphasis on Hanford environmental cleanup plus a brief look inside the B Reactor, and (2) a B Reactor tour that provides a more extensive tour of the B Reactor and includes a drive past sites at which people lived prior to the federal government taking control of the original towns of Hanford, Richland and White Bluffs in 1943. Both tour series began the first week of April and will continue until the end of September

The two tours are identical to the tours that were presented in the 2014 tour season. Registration for either tour can be made at the DOE web site at [www.hanford.gov](http://www.hanford.gov).

Registration for the Hanford Environmental Tours are available only for U.S. citizens who are at least 18 years old. All visitors must present an official photo I.D. There are 20 Hanford Environmental Tours scheduled for the 2015 season. Registration spots are usually filled very early on a first come, first served basis for this tour. Registration is only available through on-line web registration. Tours begin at 7:30 a.m. and 9:30 a.m. each scheduled date and last for 5 hours. Tour dates, requirements for registration, and other restrictions for visitors are detailed on [www.hanford.gov](http://www.hanford.gov) web site.

## From The Control Room (cont'd)

*(Continued from page 1)*

do whatever you can to help BRMA to continue its key role in the planning, development and implementing processes for the Park. Your input of ideas and suggestions are always helpful and welcomed. Please do not hesitate to offer your thoughts---they are always welcomed.

I close with a more sorrowful note in recognition of the passing of our long-time member Will Walker. He was a consistent monthly meeting attendee and often provided helpful comments and support. We extend our sympathies to his wife Dorothy and family.

Registration for the B Reactor Tours can be made either by on-line web registration or at B Reactor Tour Headquarters located at 2000 Logston Blvd in Richland. Detailed information relative to the tours can also be obtained by calling 509-376-1647 from Monday through Thursday. A total of 46 tours are scheduled for the 2015 season. Tour spots are available on a first-come, first served basis through on-line registration at <http://manhattanprojectreactor.hanford.gov>, by calling 509-376-1647, or by stopping by B Reactor Tour Headquarters at 2000 Logston Blvd, Richland. Families with children at least 12 years old may take the tour. Citizens of all countries are welcome on the B Reactor Tours and all participants may bring cameras. Middle School and High School class tours can be arranged by calling or visiting tour headquarters. A limited number of group tours are also available for groups up to 45 persons by calling or visiting tour headquarters.



Tours leave at 8:15 a.m. and 11:15 a.m. each scheduled date and last for 4 hours. The scheduled dates for the B Reactor Tours can be viewed at the [www.hanford.gov](http://www.hanford.gov) web site.

The Department of Energy has decided to add a third Hanford Tour in the 2015 season that will be called the Pre-Manhattan Project Tours. These tours will have stops at facilities that existed in the vicinity of the three original communities before the government took control of the area to establish the Manhattan Project in 1943. The scheduled dates, times and details of the route for this new tour series are in the process of being developed and are yet to be announced. When available, the details will be announced on the DOE web site.

During the 2014 Tour season there were a total of 281 B Reactor tours that included 8,800 visitors. Thirty-three of the 281 tours were school class tours.



# Register Now

**Hanford History**  
**Convenient, practical and**  
**timely classes and tours.**

*Seating is  
limited!*

**Pulling History from the  
Waste Stream: Artifacts on  
the Hanford Site**     **\$15**

Thursday, April 23, 6:30 - 8:30 p.m.

**Legacy of the Hanford Patrol**  
Tuesday, April 14, 6:30 - 8:00 p.m.     **\$12**

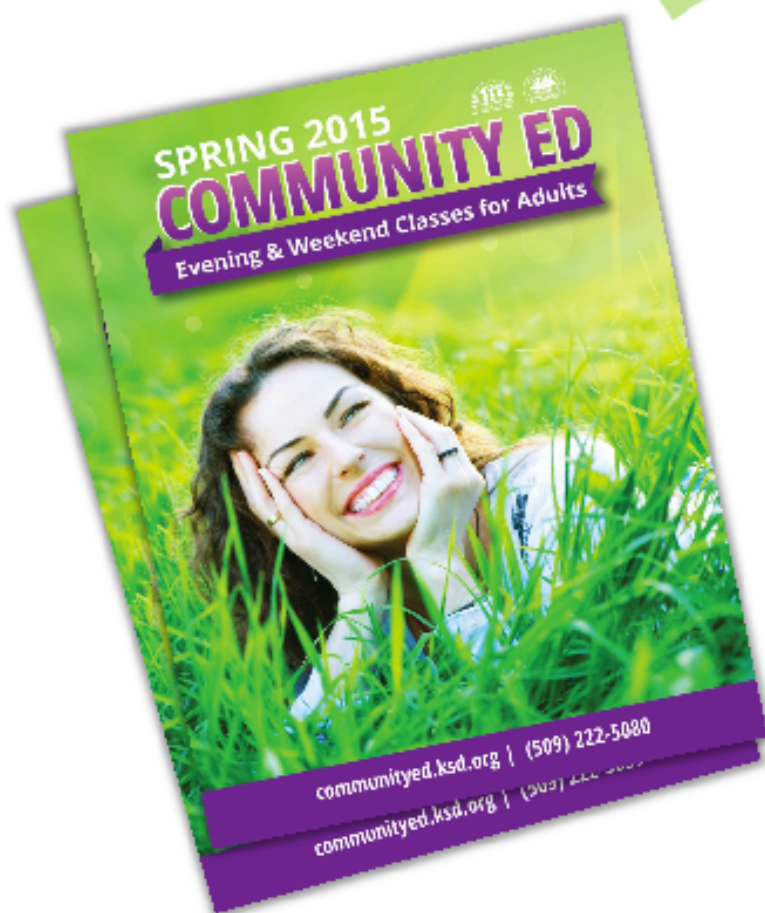
**Comic Relief for the Atomic  
Pioneer by Dupus Boomer**  
Thursday, May 7, 7:30 - 8:30 p.m.     **\$12**

**The Houses That Hanford  
Built Walking Tours**  
**Three Tours**     **\$12 each**

Saturdays, May 9, 16, 23, 9:00 - 11:00 a.m.

South Richland, Cold Coast, Central Rich and

*\*All classes require advanced registration*



For course descriptions, locations and registration go to [communityed.ksd.org](http://communityed.ksd.org)

**Questions? Call (509) 222-5080**

# The Exciting Conclusion Of The B Reactor Start-up

Or How Xenon Helped The Reactor To Reach Full Design Power

By Burt Pierard, BRMA Historian

*Here's a brief review what we have discovered in the Fall and Winter Moderators, namely the discrediting of any "Mysterious Event" elements of the Startup. In fact, on September 30, 1944, Enrico Fermi calculated that the "wet critical" load of 904 tubes would support continuous operation at 3.7 Mw instead of the expected 9 Mw. He also calculated that loading of 100 more tubes would overcome the Xenon and allow continuous operation at 10 Mw.*

Continuing on with the story, loading to 1001 tubes (including increasing all the fuel columns to 35 slugs per column) started September 30, 1944, and was completed when start-up occurred the night of October 2. Three hours later, the power reached 10 Mw and after a 24-hour run, was raised to 15 Mw for another 24 hours. Between October 5-15, two more incremental loads and power runs occurred, resulting in the 1300 tube load and 50 Mw power run starting on October 15.

On October 18, 1944, John Wheeler was obviously worried about the existing nine Control Rods' ability to control the chain reaction on Start-up until the Xenon could build up and knock down the reactivity at even the 1500 tube loading, let alone the 2004 tube loading. He wrote a memo to W. O. Simon, Manager of Hanford Engineer Works, expressing his concerns and the opinions of his colleagues, including Enrico Fermi (who felt the Control Rods would hold on for some number of tubes between 1500 and 2004). Note that this would have been a problem without the presence of Xenon but the Xenon would allow the full 2004 tubes to be used if they could get by the start-up.

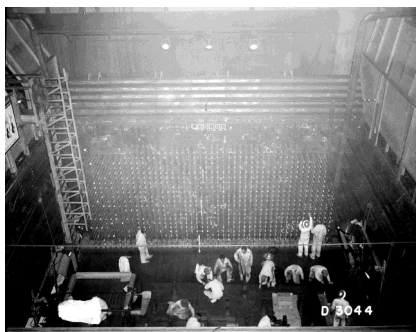
Fortunately, a radical solution to the "without Xenon" situation had been worked out before the original start-up. This involved installing a 5 by 5 lattice (25 columns) of Lead-Cadmium poison slugs. Wheeler's recommendation was to install the poison slugs on start-up and run at full power until the Xenon built up and then shutdown for a short period to push out the poison slugs and reload the tubes with

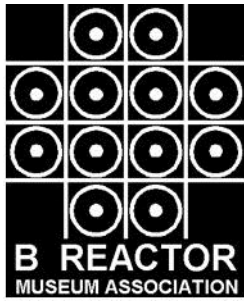
normal heavy metal slugs and then restart. (*Ed. Note:* according to BRMA member Bill McCullough, early B Reactor operator, "The normal procedure for start-up was to run at full power for about 16 hours, then shut down and perform a "P-push" [Poison Push], recharge with normal slugs, and re-start.") This scheme was instituted later when loading above 1500 tubes was done but for now, everything was geared up for getting a run to produce some Plutonium.

On October 20, 1944, tube loading was brought up to 1452 (it's unknown why 1500 weren't loaded – maybe nervous about Control Rod control with the extra 3 slugs per column installed) and a one-month power run commenced. The power level operated between 90 Mw and 180 Mw with occasional scrams and quick restarts. The Reactor was shut down on November 20 for the first discharge for processing. Over the next month, the Reactor ran off and on between 90 Mw and 180 Mw and was shut down on December 20 for discharge, hooking up the pig tails, installing the new Control System, and loading all 2004 tubes. B Reactor restarted on December 28, 1944 and ran between 150 Mw and 240 Mw, reaching the design operating power level of 250 Mw on February 4, 1945.

# # #

This article completes the Primary Researched (documented) story of the B Reactor Start-up, and what a journey it has been! I am grateful to BRMA members Ben Johnson and Russ Fabre for pointing me to the new leads of the Dale Babcock writings and B Reactor Operating Logs, respectively. I am most grateful to Colleen French, DOE-RL Communications, for resurrecting the DDRS (see article on Page 2 of this *Moderator*) and enabling me to find the critical John Wheeler Memo that filled in the Security Restricted holes in the Babcock "Nuclear News" article and thus completing the story. *Comments welcome. You can reach Burt at BPierard98@aol.com*





PO Box 1531  
Richland, WA 99352

<http://www.b-reactor.org>  
[info@b-reactor.org](mailto:info@b-reactor.org)

## Advocacy Committee For The Manhattan District National Historical Park

By John Fox, BRMA Board Member

Under the law authorizing the park, the Departments of Energy and Interior must enter into an agreement governing their respective roles in administration of the park facilities and operations by the end of CY2015. It also requires consultation with state, county and local officials and the public during this period.

To present a consistent and consensus view to DOE and DOI from local officials, TRIDEC and Visit TRI-CITIES jointly organized a committee of local stakeholders to provide ideas, recommendations and active support from the community in planning and implementing the transition to formal opening of the national park. The committee consists of local elected officials: the four City Mayors Dave Rose, Steve Young, Matt Watkins, Brent Gerry; County Commissioners Jerome Delvin, Brad Peck, Gary Garnant (Grant Co.); Port of Benton Commissioner Bob Larson; and John Fox representing BRMA. Ex Officio members are Carl Adrian, TRIDEC; Kris Watkins, Visit TRI-CITIES; and district representatives from the offices of Senators Patti Murray and Maria Cantwell and Rep. Dan Newhouse. Steve Young is chair and Matt Watkins vice chair. TRIDEC provides administrative support and some members bring a staff member from their jurisdiction. Colleen French, DOE-RL, will attend most meetings as liaison.

The DOE-DOI agreement being developed this year sets the boundaries of the park and the facilities included initially from the list of eligible ones in the law. Three years after receiving funds, a general management plan must be agreed upon. Thus,

it will be several years before normal operation of the park commences. The Advocacy Committee expects to push for making transition steps during this period to greatly expand public access by several means, to enhance the visitor experience with added exhibits and programs, and to add or upgrade facilities with private grants or donations. The Committee envisions creation of a **Friends of the Park** organization in the future as a permanent entity to serve some of these needs. BRMA's past experience and status as a 501c3 organization might help fill this role in the interim.

Senator Cantwell asked to meet with the Committee for an hour on April 3, as reported in the *Tri-City Herald* the next day. She is already well informed, is an enthusiastic supporter of the park, and fully grasps its importance to our area. TRIDEC is lobbying for park funds in future DOE and DOI budgets. The Advocacy Committee will also deal with our Congressional delegation; John Fox spoke to Rep. Newhouse about the park at his recent local office opening. However, it will be important for the community to bring other resources forward.

A dozen or more National Park Service representatives will visit here April 14-16. They will tour the site on the first day and discuss boundaries. On Wednesday, April 15, there is a public open house at the PNNL Computational Sciences Bldg., 3300 Stevens Drive, 4:30-6:30. All BRMA members are encouraged to attend. On April 16, the Advocacy Committee will meet with NPS all morning. Maynard and John will speak for BRMA's role at that time.