with Russia calls for a limit of 1700–2200 warheads by 2012 and a reserve of several hundred more. Princeton University's Frank von Hippel, an arms control expert and a member of the APS panel, notes that the 450 pits per year manufacturing capability of the proposed MPF would only be needed for an arsenal of cold war proportions—10 000 or more warheads.

▶ MPF decisions should be deferred, the report says, "while the NNSA enhances the research program on plutonium aging." The APS panel points to a pit-aging experiment being conducted at Los Alamos, "which by 2006 will help determine whether pits can be expected to have a minimum lifetime of 60 years [instead of the NNSA estimate of 45 years]." If the pits last 60 years, the earliest an existing pit would have to be replaced would be 2038, the report says.

▶ Alternative production methods should be more thoroughly studied. Instead of a new $4 billion manufacturing facility capable of producing up to 450 pits per year, the Los Alamos facility might be upgraded to produce 50–80 pits per year. A modular facility that could be expanded if the demand for pits increases should also be considered.

The APS panel also questions NNSA's justification of a large production facility based on the need to produce new types of pits. "If the additional capacity is intended to provide the option of new warhead production, then DOD [US Department of Defense] should justify the need for new warheads before NNSA builds the additional capacity to produce them," the report says. Although it is not stated outright in the APS report, von Hippel and other arms control experts have noted that any new warhead designs would almost certainly require a resumption of nuclear testing.

The panel also calls for an independent organization, such as the National Academy of Sciences or the DOD science advisory group JASON, to do an analysis to determine how to best proceed with pit manufacturing. "Deferring irreversible decisions—such as site selection and MPF design—until after 2006 affords the time to more thoroughly examine the various production options," the APS report concludes. "It also provides the time to include in the assessments the results of the pit-longevity experiment that will be completed in 2006. Finally, it will allow for more accurate estimates of future nuclear force structure to be included in sizing considerations." **Jim Dawson**

US Celebrates Oppenheimer's Centenary

On 25 June, a two-day commemoration of the centenary of J. Robert Oppenheimer's birth kicks off with a dedication by Senators Pete V. Domenici (R-NM) and Jeff Bingaman (D-NM) at the house in Los Alamos, New Mexico, where Oppenheimer and his family lived while he headed the Manhattan Project. The house remains essentially unchanged—it still has the same baby grand piano that Edward Teller once played. Helene and Gerry Suydam, who bought the house in 1946, will stay there as long as they wish, and it will eventually become a museum.

Oppenheimer's is the first of many houses of prominent Manhattan Project physicists that the Los Alamos Historical Society, Los Alamos National Laboratory, and the Washington, DC–based Atomic Heritage Foundation are trying to preserve. Eventually, those organizations hope to turn the area—including some structures currently inside the boundaries of the LANL weapons lab—into a national park accessible to the public.

Organizers of the Oppenheimer commemoration also plan a series of talks and a tour of the Manhattan Project site. Unless security clearances are obtained in time, the tour will consist of slide-show presentations (see http://www.atomicheritage.org for event details).

Also in recognition of the centenary, the office for history of science and technology at the University of California, Berkeley, has launched a Web site that lets visitors explore the contradictions and controversies of Oppenheimer's life (see http://ohst.berkeley.edu/oppenheimer).

After the Manhattan Project, Oppenheimer became director of the Institute for Advanced Study in Princeton,

ATOMIC HERITAGE FOUNDATION

Oppenheimer's Los Alamos home could form the centerpiece of a new national park.

New Jersey. During the anticommunist witch hunts of the early 1950s, and with Teller's testimony against him, Oppenheimer lost his security clearance and, consequently, access to Los Alamos. Perhaps the birthday present he would have most appreciated is congressional resolution 321, currently headed to the floor of the Senate. Sponsored by Senators Domenici, Bingaman, and Dianne Feinstein (D-CA), the resolution recognizes Oppenheimer's outstanding contributions "to theoretical physics, the Los Alamos National Laboratory, the development of nuclear energy, and the common defense and security of the United States." **Paul Guinnessy**

News Notes

New tech prize honors Web inventor. Tim Berners-Lee, inventor of the World Wide Web, is the first winner of the Millennium Technology Prize. The prize, which is to be awarded every two years by a Finnish public–private partnership, honors "an outstanding technological innovation that directly promotes people's quality of life, is based on humane values, and encourages sustainable economic development." It comes with €1 million ($1.2 million) and will be bestowed this month in Helsinki at a conference entitled "Future Society—Future Technology."

Berners-Lee

Berners-Lee conceived of the Web as a tool to aid collaboration among CERN scientists. It was made openly available on the Internet in the summer of 1991. After leaving CERN in 1994, Berners-Lee founded the World Wide Web Consortium, an international group headquartered at MIT that coordinates Web development. **TF**

Neutron scattering archives. Clifford Shull's three sons have given their father's scientific papers to his alma mater, Carnegie Mellon University. Shull shared the Nobel Prize in Physics in 1994. He died in 2001 (see PHYSICS TODAY, October 2001, page 86).

The collection spans Shull's professional career, from his undergraduate work to his retirement from MIT, where he was on the faculty for 30 years. It includes letters to and from Shull, notes from courses he taught, the first neutron Laue photograph, and records related to his role in the discovery of antiferromagnetism and his work on the crystal structure of ice.

The Shull collection will be preserved and cataloged with the help of a grant from the American Institute of Physics, and digitized with funds from the Shull family. The collection in Carnegie Mellon's archives is open now to researchers, and is slated to be accessible online in 2006. **TF** ■

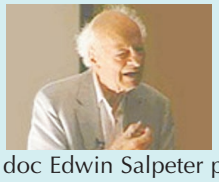
Web Watch

http://www.heavens-above.com

The **Heavens-Above** Web site provides a range of tools for calculating the visibility of the *Hubble Space Telescope* and other orbiting spacecraft. Developed and maintained by Chris Peat of the company Heavens-Above, the site and its underlying software generate charts and tables in real time for your location and time zone.

http://www.imss.fi.it

Housed in a Florentine palazzo, the **Institute and Museum of the History of Science** is both a noted repository of science artifacts and a research institute. Many of its holdings can be viewed online, along with explanatory notes in Italian and English.



http://bethe.cornell.edu

Five years ago, at the age of 93, Hans Bethe lectured the members of his retirement community in Ithaca, New York, on quantum mechanics. **Three Lectures by Hans Bethe** are now available online. Bethe's biographer, Silvan Schweber, provides an introduction, and his former postdoc Edwin Salpeter provides an appreciation.

To suggest topics or sites for Web Watch, please visit http://www.physicstoday.org/suggestwebwatch.html.

Compiled and edited by **Charles Day**