



NASA Glenn
Plum Brook Station

EIGHTH EDITION
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Decommissioning NEWS

Plum Brook Station

A quarterly
newsletter
to inform the
public about NASA's
Decommissioning
Activities

PROJECT UPDATE FINAL PREPARATIONS READY FOR REACTOR INTERNAL REMOVAL

Since going "Cold and Dark" in early spring, the Decommissioning Project has awakened with activity. New power runs through the Reactor Facility, bringing safety lighting and protection from electrical hazard. The "polar crane" flexes its 20-ton muscle, lifting loose and fixed equipment. The Containment Ventilation System (see photo at right) breathes filtered air and the Cask Transfer System has begun safely moving waste out of the containment vessel. The pulse of work beats strong and at the heart of this activity is a decommissioning milestone - the start of reactor internals removal.



Decommissioning workers change Temporary Air Ventilation System (TAVS) filters. The TAVS provides two complete changes of air per hour for the Containment Vessel (CV), and is in use whenever there are activities going on in the CV that have the potential to generate airborne contamination.

New Hands On Deck

The on-site workforce has nearly doubled in the past few months as a result of the increased activity. Montgomery Watson Harza (MWH), the lead Decommissioning Team contractor, signed on Alaron and Envirocare as waste coordinators (see "Turnkey" article on page 4), and hired Toltest to perform asbestos and lead remediation and removal of PCB (polychlorinated biphenyls) ballasts throughout the site. MOTA Corp., another team member, beefed up its Decontamination and Decommissioning (D&D) crew, now putting in 10-hour days.

In April, NASA conducted a Mobilization Readiness Review to assess whether the project was sufficiently poised to mobilize Wachs

Technical Services, Inc. - the subcontractor responsible for segmentation. "We wanted to make sure that when Wachs arrived on site, they'd be able to hit the ground running," said NASA Senior Project Engineer Keith Peecook. Given the go-ahead from NASA, the first wave of Wachs personnel arrived at the Reactor Facility in late April (see Mock-up Reactor article on page 3).

A Focus on Safety Continues

To ensure that decommissioning activities are conducted safely, all new workers have participated in a series of intensive health and safety training programs.



Posing in front of a Perkins Fire Department truck, participants take a break from Confined Space Rescue Training (see article on page 2).

Loose & Fixed Equipment Packaged & Safely Shipped

Loose equipment was cleared from quadrants A and C to make way for workers performing reactor internals removal and segmentation activities. The shipment - all of it Low Specific Activity (LSA) - was safely sent on April 10 to the Alaron waste processing facility in Pennsylvania.

WHAT'S INSIDE

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Other ways to receive Decommissioning INFORMATION

FACT SHEETS

Since June 1999, NASA has produced fact sheets dealing with various aspects of Decommissioning. Copies are available at public libraries throughout Erie County, at the Community Information Bank at the BGSU Firelands Library, on our Decommissioning Website at www.grc.nasa.gov/WWW/pbrf and by calling our Information Line at 1-800-260-3838.

COMMUNITY INFORMATION BANK

NASA has established a Community Information Bank (CIB) at the BGSU Firelands Library. The CIB serves as a permanent repository of information on the Decommissioning Project which NASA continually updates. All information at the CIB is available to the public upon request.

DECOMMISSIONING WEBSITE

Our Website is new and improved. We've added new photographs of important work performed on the project and we'll be adding video clips as well. Our Home Page now contains a mailbox enabling visitors to leave a question or a comment for members of our Decommissioning Team. Come visit us at www.grc.nasa.gov/WWW/pbrf

SPEAKERS

NASA will provide speakers upon request to civic, community and school organizations throughout Decommissioning. A video or slide presentation may be presented. For further information, contact Sally Harrington through our Information Line at 1-800-260-3838, her direct line at 216-433-2037, or at s.harrington@grc.nasa.gov.

PROJECT UPDATE (CONTINUED FROM PAGE 1)

Fixed equipment removal followed. Workers unbolted and when necessary, cut away several control stations (see photo at right), large work platforms and piping from the "lily pad" (the oblong structure at the top of the bioshield), from the rest of the zero foot (0') area of the Containment Vessel, and from quadrants A, B, C and D. Shipments of some fixed equipment, along with loose equipment, were sent to Alaron in May and June.

Segmentation Plan Updated

In the April edition of **Decommissioning News**, we reported that NASA was re-examining the approach to segmentation, to further reduce the potential radiation dose to workers. Discussions with NASA retirees and other physical investigations have since contributed to the evolution of the segmentation plan.

Data gained in second reactor tank entry provides important information and enables NASA to refine its approach to segmentation, and provide additional protection for workers:

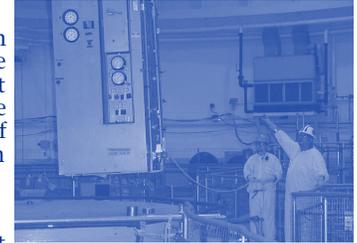
- ▶ Visual inspection of the horizontal beam tubes confirmed they are made up of two metals (aluminum tube with stainless steel liners), requiring different cutting techniques than originally planned.
- ▶ Beam tubes will be removed first, given that they contain about 30% of the radioactivity left in the reactor, and their configuration and proximity to beryllium plates.
- ▶ Removal of beam tubes first will minimize overall dose to workers during segmentation.
- ▶ The work platform for segmentation has been re-engineered to further protect workers. They will operate behind steel barriers, using articulated tools (able to bend around barriers at 90 degrees), cameras and video monitors.

In April, a second entry was made into the reactor tank to more closely inspect the horizontal beam tubes and beryllium plates. Investigators used remote video cameras and radiation detection devices to inspect three beam tubes, which are metal pipes (roughly 14 inches in diameter and 8 feet long) that run through the side of the reactor vessel and up to the reactor. The beam tubes were used to place experiments next to the reactor core. NASA considered the contents of these tubes highly activated due to their close proximity to the reactor, which direct radiation readings taken during this tank entry confirmed.

Investigators were also interested to see if there were any cracks on the surface of the beryllium plates. These plates were used for neutron exposure testing in the fueled portion of the core, and as a result now contain significant amounts of tritium (a radioactive element). Cracked plates would have the potential for release of tritium gas during removal. No cracks were visible, but NASA is taking no chances. Specially constructed handling fixtures will completely encase the plates and keep the beryllium intact throughout its handling.

Hot Dry Storage Entry

In May, workers went back into the Reactor Facility's Hot Dry Storage area to inventory and survey equipment, including encased beryllium plates that had been replaced during operation, various tools, and cadmium control rods stored there since the facility closed. Hot Dry Storage is a vault, 25 feet deep, sealed on top with 6-foot thick concrete slabs. A special "boom" arm was lowered through the 2-foot access plugs that extended the reach of cameras and detection devices out into the 20-by 40-foot space - providing video and radiation readings in areas that were not previously accessible. "The control rods appear to be the source of most of the dose in the vault," said Peacock. Hot Dry Storage waste will mostly be Class A, low-level radioactive waste (LLRW), and limited quantities of Class B and C - with total volume likely filling less than one full truck. Removal of equipment from Hot Dry Storage is slated to begin at the end of this year. ■



Control panel being removed from "lily pad" in preparation for segmentation.



Workers set in place a "mock-up" of a horizontal beam tube, enabling them to test their tooling and techniques before removing these highly irradiated tubes.

Cooperation with Local Public Safety Personnel a Plus for All

Safety is the first priority of the Decommissioning Project and this commitment includes close coordination with local public safety and health authorities, including the Erie County Emergency Management Agency, the Perkins Fire Department and area hospitals. An example of this spirit of cooperation occurred in April, when NASA participated in a Confined Space Emergency Rescue Training program, conducted jointly with firefighters from the Perkins and Margaretta Township Fire Departments. Two certified instructors from Cleveland State University led the training, which took place at Plum Brook Station.

Confined space refers to areas whose configurations hinder the activities of any employees who enter, work in or exit them. The rescue training is particularly important to NASA, because decommissioning workers in the Reactor Facility encounter several confined spaces, including the facility's quadrants and canals, and areas adjacent to the reactor tank. The training took place at the Assembly Test Storage Facility, located next to the Reactor Facility. Keith Peacock, NASA Senior Project Engineer, said the building was chosen because "its physical arrangement enabled participants to undertake several scenarios" including rescues from a pit 25 feet deep, a basement with limited access, and a remote overhead location.

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Do you want to know what 's happening? Do you have questions or comments on Decommissioning?
CALL OUR INFORMATION LINE AT 1-800-260-3838.

Mock-up Reactor put to work one final time!

It's ironic. When NASA was creating the Plum Brook Station Reactor Facility in the early 1960s, it built a 100-kilowatt mock-up reactor (MUR) to preview experiments that were slated for the facility's principal 60-megawatt test reactor. What worked safely and well on the less powerful MUR, it was reasoned, would work safely and well on the higher-power test reactor.

Thirty years after its last use, and based on similar reasoning, the MUR is again being used, this time to preview the safe segmentation and removal of the reactor internals and the vessel tank of its larger sibling.

Its creators probably never dreamed of using the MUR to help de-construct the larger reactor, but in fact, the mock-up reactor is being used for one final time exactly as it was intended - to preview procedures, to anticipate problems before they develop, and to find solutions that can be applied to those problems.

For NASA today, thanks to its plan to use the MUR as a simulator once again, a safer, more efficient, and less costly decommissioning of the entire Reactor Facility will be possible.

Wachs Technical Services, Inc. is the subcontractor taking apart and removing the reactor internals, and doing the subsequent segmentation of the vessel tank. Before actual segmentation work was to begin on the main reactor (see Project Update article), Wachs went through a series of "mock-ups" including using the MUR over a two-week period to test specific tooling, rigging and procedures.

The MUR is a physical replica of the test reactor, with about 95 percent of its assembly - including the reactor internals - identical to the larger unit, according to NASA Senior Project Engineer Keith Peacock. Also, because it operated at a

much lower power level than the main reactor, there was much less activation of the structure. As a result, measurements have shown that the current radiation levels are about one million times lower in the MUR than in the main reactor.

Some of the procedures to be used in the segmentation process involve "articulated" tools that extend or bend around shielding or other barriers. Testing those tools on the mock-up reactor - to see that they work as planned - before they are applied to the main reactor enables workers to gain experience with them in a realistic training environment, and they will have less exposure time to radiation sources while working on the main reactor internals.

Using the mock-up reactor as a simulator in the decommissioning process wasn't originally part of NASA's segmentation plan. Instead, contractors intended to build full-size, off-site "mock-ups" of certain reactor parts to test tooling and procedures that would be used on those parts. But, when it was proposed that the MUR be used as a scale model to test certain tools and procedures that will be used for removal of the internals and segmentation, everyone associated with the project quickly saw the wisdom in that idea.

As expressed by Montgomery Watson Harza's Reactor Segmentation Task Manager Al Salamo, "I've been taking apart reactors for 15 years and never had an opportunity like this - to use this kind of a tool."

An additional advantage or side benefit, NASA's Peacock noted, was the early, albeit partial, disassembly of the MUR. The only parts of the MUR being disassembled now are those necessary to support the testing and training. At some later point in the decommissioning process, the MUR itself will be completely disassembled. ■



Participants in Confined Space Rescue Training are shown moving a "victim" from a 25 foot-deep pit.

Confined Space Rescue Training (CONTINUED FROM PAGE 2)

According to Perkins Fire Chief Rick Ennis, the Confined Space Rescue Training "went really well. I heard that from our (eleven) people and from NASA. This speaks well for the cooperation between our agencies....(NASA) was able to assist us in putting on the training and we'll be able to help them," as his department has a Memorandum of Understanding to provide backup rescue services for the Decommissioning Project. He added that advanced training is planned for this fall. Ennis was a founding member of the Decommissioning Community Workgroup, which serves as a vehicle for two-way communication between NASA and the community. Key public safety and health officials who are current members include Erie County Emergency Management Agency Director Bill Walker and Board of Health Director Steve Casali. ■

COMMUNITY WORKGROUP MEMBER PROFILE



Ralph Roshong

He's devoted his life to education, and now Ralph Roshong is helping to educate neighbors about decommissioning. The Perkins Township resident - and Superintendent of the Kelleys

Island Board of Education - says "I periodically E-mail neighbors, telling them about Workgroup meetings, and asking if they received their newsletters," which are mailed in advance of the quarterly meetings. He says residents in his Cambridge Circle/Columbus Avenue neighborhood "feel very informed about decommissioning and are comfortable with the project."

The Toledo native, who holds undergraduate and graduate degrees from the University of Toledo, came to Perkins Township nearly 20 years ago. He served six years as Superintendent of the Perkins Schools and has also been Superintendent in Ashland County and Business Manager of the Port Clinton Schools, among other positions. Ralph has been working on Kelleys Island for four years and says he sometimes talks about the Decommissioning Project with the island's emergency personnel. He notes that decommissioning tends to come up within the context of conversations about the Davis-Besse nuclear plant, and that his contacts do not confuse the two facilities. Ralph says he mostly talks about decommissioning in conversations with neighbors, who have few specific questions, other than "Is the project going according to schedule?" To this, he replies, "I tell them (decommissioning) is going on as planned - safe and well."

Ralph has been involved in a number of community issues, adding "I keep a behind-the-scenes watch on the county. People know I will speak up if I see a problem." He's not surprised by a lack of public complaints or questions about decommissioning, remarking with a laugh, "If there were problems, people would be beating down my door." Ralph has stressed to neighbors that the Reactor Facility has not had any fuel on-site since 1973, observing, "I think the big thing, early on, was that some people did not realize there was no fuel there. I tell people (the reactor) is basically just a shell with small amount of radiation."

As decommissioning moves forward, Ralph believes Workgroup members will need to continue answering the public's questions, including "what will be done with the area when it is cleaned up." [Note: Nothing will be built at the Reactor Facility site, and Plum Brook Station will continue as an active NASA test facility.] He plans to continue attending Workgroup meetings, learning what he can and sharing what he knows with the community. After all, Ralph Roshong knows that education is a lifelong pursuit. ■

VISIT US ON-LINE

You can find our Decommissioning Website at www.grc.nasa.gov/WWW/pbrf



In Our Upcoming Issue

Decommissioning News gets bigger and better in October. Look for our centerfold pictorial, "Project in Progress".

A New Team Member

Mike Fulford Joins Decommissioning Team As New USACE Resident Manager

There's a new face on the Decommissioning Team. Mike Fulford is now the project's Resident Manager for the U.S. Army Corps of Engineers (USACE). Experienced in the oversight of large construction projects, he also has a background in Decontamination and Decommissioning. Before joining the Plum Brook Reactor Facility Decommissioning Team, Mike served for four years with the U.S. Department of Energy, as a Senior Projects Manager at the Los Alamos nuclear facility in New Mexico. Mike joined our team in April and came aboard full-time in June. His priority is to "make sure we keep this project on time and on budget, ensuring that decommissioning is conducted in the safest, most efficient manner possible." He succeeds Wes Watson, who is now working on USACE efforts to assist in the reconstruction of Iraq. ■

Two "Turnkey" Waste Contractors Join Decommissioning Team

You've heard the expression two heads are better than one? In this case, two waste contractors rose to the top of the selection process conducted by Montgomery Watson Harza, MWH (the lead Decommissioning Team contractor) for a "turnkey" waste contractor, responsible for coordinating every step in safely and efficiently delivering waste to its final destination. The Decommissioning Team agreed that the surest, safest approach to manage the complex and intricate requirements for waste packaging, transportation and disposal was to bring onboard experts from the disposal/reprocessing sites themselves. Two companies were selected: Alaron to handle material that is potentially releasable for reuse or that needs volume reduction, and Envirocare of Utah, Inc. to handle Class A low-level radioactive waste. Each company will provide an onsite waste professional with expertise in packaging, coordinating transportation methods (by rail or truck), scheduling shipments, and obtaining any necessary permits. MWH will maintain direct oversight and surveying throughout decommissioning, and will continue to take the lead on any shipments being made to the Barnwell Disposal Facility in South Carolina.

Below is a brief description of Envirocare. The Alaron and Barnwell facilities will be featured in upcoming newsletters.

Envirocare of Utah, Inc.

In 1988, Envirocare of Utah, Inc., began operations at its present site in Utah's Western Desert, 80 miles west of Salt Lake City. Close to U.S. Highway 80, Envirocare's disposal facility is situated in Clive - named for the railroad siding located north of the site. The site was chosen for its remote location - it is more than 45 miles to the nearest population and more than 20 miles from drinking water supplies. The area is low in annual precipitation, has low-permeability clay soils, and stable geology - ideal factors for safeguarding the integrity of disposal cells and ensuring long-term protection of the environment.

Today, Envirocare is a full-service waste consulting company and the nation's largest commercial facility licensed to accept Class A, low-level radioactive waste (LLRW) for disposal. It receives an average of 10 million cubic feet per year, including metal and concrete objects ranging from bioshield walls, reactor vessel heads, ductwork, cables, pipes and asbestos. Envirocare is also a hazardous waste disposal facility licensed by the State of Utah and the United States Environmental Protection Agency (EPA), under the Resource Conservation Recovery Act (RCRA), to receive, possess, use, treat and dispose of mixed radioactive materials.

Envirocare disposes radioactive waste material in above ground, engineered disposal cells that meet federal and Nuclear Regulatory Commission (NRC) disposal requirements. For more information on Envirocare, visit www.envirocareutah.com. ■



NASA Glenn Plum Brook Station

6100 Columbus Avenue
Sandusky, Ohio 44870

Community Workgroup Meeting

TUESDAY, JULY 22, 7 p.m.

Huron Public Library
333 Williams Street, Huron