



NEWSLETTER

DECONTAMINATION DECOMMISSIONING AND REUTILIZATION DIVISION OCTOBER 2004

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CHAIR'S MESSAGE

Welcome to the American Nuclear Society Decommissioning, Decontamination and Reutilization (DD&R) Division Fall 2004 Newsletter.

The newsletter pages are filled with information on the status of some of the various decommissioning projects being conducted in this country and internationally. Significant progress is being made toward the completion of decommissioning projects in the commercial nuclear power industry and in the U.S. Department of Energy (DOE) complex. Some projects are approaching completion in the 2005 and 2006 time frames. Completion of these cleanup activities demonstrates the maturity of the nuclear power industry and closure on some of the more difficult defense related projects.

[Chair's Message \(Continued\)](#)

If you wish to use some of the information on the status of the many projects found inside the newsletter, I urge you to contact the various projects directly. The material in these pages is just a snapshot in time. If you wish to know more about the details of these projects, I urge you to attend one of our upcoming meetings in November 2004 in Washington DC, June 2005 in San Diego, CA and the DD&R Topical meeting in August 2005 in Denver, CO. The DD&R Division sponsors numerous sessions in the winter and summer meetings designed to provide in depth discussions and perspectives on key and emerging issues in the DD&R realm. The DD&R 2005 Topical meeting will focus on lessons learned from site closure activities and governmental and commercial experiences worldwide. The sessions will include details on technical advancements, regulatory changes, waste management and long term stewardship. If you want to learn more about the meetings or wish to participate in the sessions please go to <http://ans.org/meetings>.

Enjoy the newsletter and seriously consider attending our meetings.

Russ Mellor

MEETINGS AND CONFERENCES

UPCOMING MEETINGS

ANS 2004 Winter Meeting “ Leadership Toward a Progressive, Integrated Nuclear Community – Going Forward Together”, November 14-18, 2004 Washington, D.C. Omni Shoreham

DD&R will support the conference in Track 6: “Life Extension, Future Reactors, Reutilization, and Decommissioning”. The Sessions and Organizers are as follows:

- Life After Decommissioning, Site/Facility Reutilization – Panel
Organizers: Larry Boing
Joe Carignan
- Regulatory Framework in Commercial and Government Decommissioning: Initiating Decontamination and Decommissioning Activities – Papers/Panel
Organizers: Art Paynter
Mark Morton
- Regulatory Framework in Commercial and Government Decommissioning: Closure Activities – Papers/Panel
Organizers: Mark Morton
Art Paynter
- Decommissioning: General Topics – Papers/Panel
Organizers: John Gunning
Jim Byrne
- Decommissioning: Hot Topics and Emerging Issues – Papers/Panel
Organizers: Joe Carignan
Larry Boing

Meetings and Conferences (Continued)

Also, there are two embedded topical meetings held in conjunction with the 2004 ANS Winter Meeting and the ANS Nuclear Technology Expo.

For more information, check the ANS website at (<http://ddrd.ans.org>):

Waste Management 2005, Tucson, AZ, February 27-March 3, 2005

The Conference is sponsored by WM Symposia Inc., the University of Arizona, and ANS.

The Program Advisory Committee for Waste Management '05 met at Tucson, on September 20-21 and reviewed the 500 plus abstracts submitted to the conference. The D&D Program of the conference is extensive with 7 oral sessions, one poster session and a lead in D&D panel with senior managers from the U.S. and Europe. The Preliminary Program is expected to be available in October 2004. Dr. Jas Devgun is the Track Chair for the D&D Track.

2005 ANS Topical Meeting on Decommissioning, Decontamination and Reutilization, Denver, Colorado, August 7-11, 2005

Co-Sponsored by the DD&R and FCWM. The program will include commercial, government, and international project updates and technology developments in the areas of decommissioning, waste management, site closure and legacy management. In addition to a comprehensive technical program, there will be technical tours and numerous fun activities and opportunities for attendees and guests to enjoy this incredible mountain vacation destination.

For more information, check the ANS website at (<http://ddrd.ans.org>):

International Decommissioning Lessons Learned Conference - Location to be Determined, October 2006. The International Atomic Energy Agency (IAEA) is planning to hold a conference on this subject. The ANS is expecting to participate and support the conference.

PAST MEETINGS

ANS 2004 Annual Meeting “ A Golden Anniversary – A Golden Opportunity”, in Pittsburgh, PA – June 13-17, 2004

ANS celebrated its 50th anniversary at the Annual meeting. In addition, 2004 was the 25th anniversary of the TMI-2 Accident. DD&R supported the conference theme with several sessions. There were four sessions presented with the organizers noted as follows:

- ✓ TMI-2: 25 Years After the Accident – What Are the Lessons We Need to Remember? Organizer – Jim Byrne
- ✓ Regulatory Interfaces Organizer – Tracy Goble
- ✓ Clearance of Solid Materials: Federal and Industry Update - Organizer: Jas Devgun/Art Desrosiers
- ✓ Hot Topics and Emerging Issues - Organizer: Joe Carignan

Meetings and Conferences (Continued)

14th Pacific Basin Nuclear Conference and Technology Exhibit “New Technologies for a New Era” in Honolulu, Hawaii – March 21-25, 2004

DD&R organized the Decommissioning of Nuclear Facilities Session. The session organizer was Jim Rang. Session Chairs were Tom LaGuardia and Takeshi Ishikura. A summary of the papers presented is as follows:

1. “A Brief History of Early Decommissioned Reactors.” Presented by Tom LaGuardia of TLG Services, Inc.
2. “Technology Development for Commercial Nuclear Power Plant Decommissioning,” presented by Takeshi Ishikura of Nuclear Power Engineering Corporation (NUPEC)
3. “EPRI Decommissioning Program Overview,” presented by Chris Wood of EPRI.
4. “Removal of Uranium Compounds from Metallic Wastes Generated by Dismantling a Uranium Conversion Plant,” presented by W. K. Choi of the Korea Atomic Energy Research Institute.

DENVER TOPICAL MEETING ON DD&R

The Colorado Section and the DD&R Division staff (principally the Technical Program Committee) continue refining plans for an exciting DD&R Topical Meeting to be held in Denver, CO, August 7-11, 2005. Dick Raaz is the General Chair,

Three tracks have been selected for that meeting: Decommissioning, Waste Management, and Legacy Management. Track and Session chairs have been identified and are posted on the ANS Website (<http://ddrd.ans.org>): (Meetings). The Call for Papers is on the same site. In addition to the conference’s three tracks, we are also planning a Professional Development Workshop, which will help attendees learn how to develop a site-specific approach for sampling & measurement to satisfy final status survey (FSS) requirements for release of a portion of an operating site. We are working on invitations to prominent decision makers in these important areas to make the meeting valuable, informative, and even entertaining for conference participants.

Mark your calendars and plan to bring your families for an exciting Colorado Vacation next summer. The International Golf Tournament will be played in Denver August 4-7, 2005 and provides a wonderful opportunity for golfers to see some great play. See you in Denver!

CANADIAN DECOMMISSIONING CONFERENCE

While developing the program for the upcoming DD&R Topical Meeting to be held in Denver, August 7-11, 2005 we initiated some contacts with our Canadian colleagues.

The Canadian Nuclear Society is holding a conference on “*Waste Management, Decommissioning and Environmental Restoration Activities in Canada*”, to be held May 8-11, 2005 at the Crowne Plaza Hotel in downtown Ottawa, Ontario, Canada. An equipment and services exhibition is planned in conjunction with the Conference.

[Canadian Decommissioning Conference \(Continued\)](#)

The conference will focus on the technical, regulatory and social challenges and opportunities for radioactive waste management, nuclear facility decommissioning and environmental restoration activities in **Canada**. As part of our contact with the Canadian conference, DD&R solicited a paper for the conference on the status of decommissioning in the United States. We also agreed to put in a plug for their conference in this newsletter and the Canadians agreed to reciprocate.

The Canadian Nuclear Society conference is organized into several plenary sessions and eight technical tracks: Low-and intermediate-level wastes; uranium mining and milling wastes; spent nuclear fuel; decommissioning; environmental restoration; policy, economics and social issues; licensing and regulatory issues; and radioactive materials transportation. For those of you that have an interest in decommissioning activities in Canada this appears to be an excellent venue.

The Call for Papers, contact details and other information can be found on the conference web site at http://www.cns-snc.ca/waste_05.html, or by contacting wm2005@cns-snc.ca.

DIVISION COMMITTEE MEETINGS AT WINTER MEETING

DD&R Division meetings are open to all members of the division. If you are in Washington, DC for the 2004 ANS Winter Meeting please stop in, we would like to meet you. The schedule and location of all of the DD&R Division Committee Meetings are provided below.

Program Committee - Sunday November 14, 2004, 1:00 – 3:00 PM – (Cabinet Room)
Executive Committee - Sunday November 14, 2004, 3:00 – 5:30 PM – (Cabinet Room)

Please check your final programs after arrival at the conference to confirm meeting rooms. They are subject to change.

MEMBERSHIP RECRUITMENT

Pssst....hey, are you an ANS-DD&R Division member? WHY NOT!? Let your membership expire huh? It costs too much huh? You don't have the time huh?! Now more than ever you really **can't** afford not to be in ANS-DD&R. The DD&R website visitors get a really great information chocked newsletter, reduced registration fees at ANS meetings, a reduced rate for RadWaste Solutions magazine plus you get over 1000 colleagues to network with and to talk 'decommissioning shop' with at the ANS semi-annual meetings and embedded topical meetings. When you break it all down - it only costs you about \$2 per week – about as inexpensive as your Sunday newspaper. Come on Look at the value added by networking in and participating in the leading nuclear technical society that has a full division in the field of Decommissioning. If you don't start learning about what's going on in this important field – your competitor will – or probably already does and is working an angle on leveraging that knowledge already. Join the ANS-DD&R Division today or if you are already a member recruit a colleague or any friend – trust me – you'll like this group. Nobody gets left behind.

PUBLICITY AND PUBLIC POLICY

LOW LEVEL RADWASTE POSITION PAPER - A draft ANS position paper on Low Level RadWaste (LLRW) sponsored by both the DD&R Division and the Fuel Cycle & Waste Management Division was sent to the ANS Public Policy Committee for review early in September. After the Public Policy Committee completes their review, the ANS Board of Directors will review it. After their approval, the position paper will be posted on the ANS website as the official ANS position on LLRW. Thanks to all those who participated in the intensive development and review process, since there were many diverse opinions.

DIVISION SCHOLARSHIP

Each year, the DD& R Division awards a scholarship with a stipend of \$2,000. In addition, the Division provides travel support (transportation, lodging, and per diem) for the student scholar to attend both the annual and the winter meetings of the ANS. The present recipient of the DD&R Division Scholarship is Jennifer Michelle Cole who is in the Nuclear and Radiological Engineering program at the University of Tennessee at Knoxville. Please see the May 2004 Newsletter for additional information on Jennifer.

Details on the DD&R Scholarship, as well as other ANS scholarships, can be found on the scholarship link to the ANS web site. The address is <http://www.ans.org/honors/scholarships/>.

AWARDS AND HONORS

Dr. Robert Long, Past-president of ANS, has yet another award to add to his long list of lifetime achievements. Bob is the winner of the Best Poster at the DD&RD sessions during the Pittsburgh, PA Annual Meeting. It is fitting that the Pennsylvania born and bred Long would deliver an excellent poster presentation in his home state. His presentation was superior to more than 20 other posters that were presented. It will be our privilege to present him his award during the DD & RD Executive Committee Meeting on November 14, 2004.

SITE CLEANUP AND RESTORATION STANDARDS

The Special Committee on Site Cleanup and Restoration Standards was renewed at the June 2004 ANS Annual meeting. The committee is currently engaged in drafting the ANS position statement, PS 64, in the area of emergency cleanup following a radiological dispersion device (RDD) event. In the post-9/11 environment, this is a significant area. The cleanup following a potential RDD event will not follow the normal or existing cleanup standards. Other organizations are also working on it. Given our mandate and the level of effort, we envision the ANS position statement to be a short statement (or endorsement of work by other organizations), rather than a detailed technical position establishing the standards for the emergency cleanup.

Dr. Jas Devgun, is the Chair, ANS Special Committee on Site Cleanup and Restoration Standards (ANS/SCRS)

NRC DECOMMISSIONING PROGRAM STATUS REPORT

NRC's Annual Report on the Status of the Decommissioning Program - The NRC staff is in the process of completing work on its 2004 Annual Report on the Status of the Decommissioning Program. This NUREG report provides a comprehensive status of the U.S. Nuclear Regulatory Commission's decommissioning program. Its purpose is to provide a stand-alone reference document that describes the decommissioning process and summarizes the status of all decommissioning activities since the last report, through August 1, 2004, including the decommissioning of complex decommissioning sites, commercial reactors, research and test reactors, uranium mill tailings facilities, and fuel cycle facilities. In addition, this report discusses accomplishments in the decommissioning program since last year's report (SECY-03-0161), and it informs the Commission of decommissioning issues that the staff will address in the coming year.

Because the annual report contains information that is not expected to change from year to year (i.e., discussion of the materials decommissioning process), the staff will publish the report in the form of a NUREG document every 2 years, beginning with this report. In the odd-number years, the staff will publish the report as a shortened paper to the Commission, referencing the decommissioning Website.

The NUREG is one part of the overall communication strategy for the decommissioning program. To support the Commission Paper issued in the odd years, the staff is updating its web page to reflect the entire decommissioning program, including site summaries. In addition, the staff plans to develop a general brochure summarizing the decommissioning program, which can be handed out to members of the public. The staff will publish the report as a final NUREG in December 2004. A commission meeting will be held October 13, 2004, to discuss the decommissioning program.

DOE DECOMMISSIONING HANDBOOK

The ASME Decommissioning Handbook is now in print and will be available for purchase in late September 2004. The Table of Contents and purchase price can be viewed on the ASME website at www.asme.org, Select Products and Publications, then ASME Press, then New Titles. Although not currently available for purchase, advance copies are being distributed to the editors and authors, so public distribution should follow soon.

DD&R DIVISION WEB PAGE

The DD&R web site <http://ddrd.ans.org> provides an excellent source of current information about our Division, including upcoming meetings, members of the executive committee, officers, and subcommittee chairs. If you are interested in the current direction and decisions of the leadership, minutes of the Executive Committee and Program Committee are also available there. And for the historians out there, a listing of recently completed meetings and meeting minutes is available that extends back to 2000.

If you are reading this newsletter in hard copy form and misplace it, you can easily retrieve the newsletter again by downloading a copy from the NEWSLETTER(S) page on the web site.

[DD&R Division Web Site \(Continued\)](#)

Hana Shapira continues to do excellent work as Webmaster for the Division web site. She is currently working with Division leadership members in evaluating the possibility of making a portion of the website password protected so that only Division members will be able to access it.

Please take a look at the web site, and feel free to submit your suggestions for changes, corrections, or upgrades. These suggestions can be provided directly to the Chair (Russ), or alternately submitted via the Members Input page on the web site. We believe that the DD&R Division's web page is one of the best among those sponsored by Divisions within ANS. With your review and suggestions, we hope to be able to maintain this status.

SAXTON DECOMMISSIONING UPDATE

Since publication of the last newsletter Saxton has completed Final Status Survey and backfill of the Containment Vessel excavation and the former Saxton Steam Generating Station (a coal fired plant that was used to generate electricity from the nuclear plants steam and was demolished in 1975). We have also completed Final Status Survey and closeout of the Discharge Tunnel.

Remaining work at Saxton includes some soil remediation and completion of the Final Status Survey for the remainder of the site.



Saxton Before Dome Removal

Saxton Decommissioning Update (Continued)



Saxton Today

RANCHO SECO DECOMMISSIONING UPDATE

Vessel Internals – A contract was finally signed and preparations for vessel internals removal are in progress. However, since actual work is not expected until January the steam generator removal work was accelerated and should be complete before internals work begins. Mechanical cutting and milling will be used to remove internals underwater. Core baffles and formers (>Class C) will be placed in a fuel-type canister for storage in the ISFSI. Class B and C internals will be stored in liners onsite until disposal is arranged. Class A waste will be shipped to Envirocare. This work should be complete by late 2005.

Large Components –The pressurizer was shipped to Envirocare in April. Preparations for shipment of the steam generators are in progress. Due to the size of the B&W steam generators it was necessary to cut them to allow shipment by rail to Envirocare. DOT exemptions for shipment of the steam generator halves, unpackaged, with welded caps were received in May. At that point, due to the delay in vessel internals work, it was decided to accelerate the steam generator shipment to this year instead of 2005/6. Diamond wire cutting was used to cut the tube bundles through holes cut in the steam generator shell. Lifting jacks are being placed to lift the generator pieces. Once the jacks are in place the remaining segments of shell will be cut, the top half will be lifted, capped and placed on a rail car. The lower half will then be capped and removed. Due to the size of the pieces, they could be removed through the equipment hatch and travel on a fairly standard railcar. Planning is in progress for vessel segmentation. No DOT exemptions are expected to be needed for shipment to Envirocare. Various cutting methods and shipping configurations are being considered.

Spent Fuel Pool – Liner removal is complete by use of a milling apparatus that cuts the welds between panels and wall embeds. Floor coring is in progress for soil sampling under the pool. One internal wall is significantly contaminated from liner leakage and will be decontaminated or removed.

[Rancho Seco Decommissioning Update \(Continued\)](#)

Outside Components –Contaminated soil has been removed in areas where component leakage occurred. Much of the contaminated underground pipe has been removed with the remainder to be removed next year. Work is ongoing to remove temporary (non concrete) buildings and structures.

License Termination Plan – Work has begun on the LTP. The initial meeting with the NRC has occurred. Characterization work is ongoing to support the LTP. Preliminary DCGLs have been determined to support decontamination planning.

Site Re-Powering – Construction is in progress for a 500 MW natural gas fired plant on utility property south of the current security fence. The new plant will make use of the Rancho Seco switchyard and site water supply and should come on line in the summer of 2005.



Steam Generator being cut with diamond-wire saw through hole in shell

CONNECTICUT YANKEE DECOMMISSIONING UPDATE

Decommissioning - Connecticut Yankee continues to make excellent progress in the decommissioning effort at the Haddam Neck Nuclear Power Plant and has begun demolition activities in addition to ongoing decommissioning work. Physical decommissioning is scheduled to be completed by the end of 2006. The plant site has accumulated more than 4 million work hours and gone four years since its last lost time accident.

Manafort Brothers Incorporated was awarded the demolition contract and began mobilizing onsite in May 2004. Demolition activities began in July with the removal of the ventilation stack, demolition of the emergency diesel generator building, demolition of the waste disposal building and the former Health Physics facility. Demolition of the turbine pedestal and the administration building are nearing completion. Equipment and components, including the neutron shield tank, are being removed from containment in preparation for turnover to the demolition contractor. A portion of the Primary Auxiliary Building has been removed to facilitate the demolition and remediation of the ion exchange system and the removal of contaminated soil in that area.

[Connecticut Yankee Decommissioning Update \(Continued\)](#)

CY's site closure team has completed the Integrated Site Closure Plan. Integrated Site Closure activities continue to focus on groundwater characterization and monitoring, final status survey of miscellaneous land areas, and RCRA Corrective Action Program implementations.

The NRC has approved the first partial release of 93 acres of undeveloped land located in the southeastern portion of CY's 550-plus acre site. CY will retain ownership of this area until decommissioning is finished and the entire site is available for property transfer.



Demolition of the Emergency Diesel Generator Building



Demolition of the Turbine Pedestal

[Connecticut Yankee Decommissioning Update \(Continued\)](#)

Dry Fuel Storage - CY's wet to dry fuel transfer campaign is also making excellent progress. As of the end of September, 18 of 43 Vertical Concrete Casks (VCCs) were safely placed on CY's ISFSI pad. Two of the VCCs contain GTCC waste. A second fuel transfer cask was added to the fuel loading process allowing simultaneous fuel canister processing. The fuel transfer project is scheduled to be completed in the first quarter of 2005.



Connecticut Yankee ISFSI with 17 Vertical Concrete Casks

YANKEE ROWE DECOMMISSIONING UPDATE

Yankee Rowe is entering its final year of decommissioning. All above- and below- grade physical decommissioning work is scheduled to be completed by June of 2005. Final Status Survey and preparation for property transfer is scheduled to be completed by the end of 2005.

Yankee Rowe Decommissioning Update (Continued)

The removal of Yankee Rowe's signature Horton Sphere vapor container (VC) was the most noticeable decommissioning activity during 2004. In addition to this high-profile project, other crucial final decommissioning and demolition activities are underway, including preparation of the primary auxiliary building, reactor support structure (RSS) and spent fuel pool building for demolition, remediation of PCB-containing paint from the VC steel and demolition of the screenwell structure. Explosives were considered as a potential method for softening the RSS to facilitate demolition, but due to the proximity of the RSS to a nearby dam, a conventional wrecking ball will be used. A portion of the remaining demolition debris that meets the standard acceptance criteria will be retained on site for fill and grading.

Remediation of PCB-containing paint chips in Sherman Pond is scheduled to begin in October 2004. The paint chips flaked off the VC during winter months and entered the pond through storm drains. Other ongoing efforts include FSS procedure preparation and the start of FSS activities, planning for the removal of an on-site, non-rad construction landfill, and License Termination Plan (LTP) activities. Yankee Rowe's LTP was submitted to the NRC in November 2003 with supplemental information submitted in early 2004. On April 22, 2004, the NRC notified Yankee that they had accepted the LTP for a detailed review. The NRC held a public meeting in June 2004. Citizens Awareness Network has requested a public hearing and filed LTP contentions.

Yankee Atomic Electric Company (YAEC), owner of the Yankee Rowe plant celebrated its 50th anniversary in September. On August 31, 1954, representatives from a group of electric utilities in New England met and agreed to form a company whose purpose was to build and operate a full-sized, commercial nuclear plant for the generation of electricity. The meeting was one day after President Eisenhower signed into law an amendment to the Atomic Energy Act allowing private ownership of atomic facilities as part of the "Atoms For Peace" program. YAEC was officially incorporated on September 17, 1954. The Yankee Rowe plant was the third commercial nuclear plant built in the U.S. and the first in New England. Initially planned as a proto-type for reactor research, the plant was expected to operate for about six years. Due to the plant's excellent performance, Yankee Rowe's owners operated it commercially for 30 years.



Aerial View of Vapor Container – May 2004

Yankee Rowe Decommissioning Update (Continued)



View of Reactor Support Structure – June 2004



View of Reactor Support Structure after removal of Vapor Container.

MAINE YANKEE DECOMMISSIONING UPDATE

Maine Yankee's decommissioning is in the final phase and expected to be complete in spring 2005. The project, which began in 1997, is being accomplished safely, on schedule and on budget. Nearly 2 million hours have been worked since the last lost time injury and worker radiological dose is less than half the U.S. Nuclear Regulatory Commission limit. There are about 150 workers on the project team.

On September 17, in a first of a kind event, the 150 foot tall containment building was safely demolished with explosives. Containment was the last remaining plant building. As anticipated the dome was lowered to the ground intact and is now being broken up by excavators with hoe-rams for shipment as waste by rail. Explosive demolition was the safest method for bringing down the massive concrete and steel reinforced structure.

In order to demolish containment the structure had to be weakened significantly. That was done by cutting nine 75-foot tall rectangular openings through the steel-reinforced concrete walls and the interior steel liner. The columns between the openings were then drilled laterally and explosives placed in the holes. Chain link fence and fabric wrapped around the columns minimized flying debris when the columns supporting the dome were explosively demolished.

Other major work activities over the summer included: final discharge of the spent fuel pool water, demolition of the primary auxiliary building, spent fuel building, and yard crane. Remediation of soil in the plant yard area has also been a significant and ongoing activity. Physical work is expected to be complete in late January. To date about 75 percent of the estimated waste from decommissioning has been shipped from the site.

Going forward much of the remaining focus will be on radiological final status surveys to document that the site has been remediated as required by the License Termination Plan.

Following NRC approval of the final status survey results, expected next spring, the land under Maine Yankee's NRC license will be reduced to the area of the Independent Spent Fuel Storage Installation.

As the NRC licensee, Maine Yankee will continue to be a spent fuel storage company until the Federal government fulfills its commitment to remove this material from the site. All of Maine Yankee's spent nuclear fuel has been stored in dry casks since February 2004.

For more information on Maine Yankee's decommissioning and spent fuel storage, contact Public and Government Affairs Director Eric Howes at Howese@myapc.com or 207-721-8694.

Maine Yankee Decommissioning Update (Continued)



Containment Before Demolition



Containment During Demolition

Maine Yankee Decommissioning Update (Continued)



Containment After Demolition

ROCKY FLATS DECOMMISSIONING UPDATE

Once called the most dangerous building in America by *ABC News*, Building 771 at Rocky Flats will soon exist only in memory. The former plutonium liquid processing facility has been cleaned up and decontaminated to the extent possible and building demolition is expected to finish in October 2004.

The majority of Building 771 was decontaminated to free release levels and the resulting demolition rubble used as backfill for the 771 hillside. Some areas in the building contained low levels of contamination that couldn't be removed, even after extensive decontamination efforts.

As a result, the three signatories to the Rocky Flats Cleanup Agreement (RFCA) – Department of Energy, Colorado Department of Public Health and Environment and the Environmental Protection Agency – agreed to leave in place concrete walls and floors that are more than six feet below grade, providing contamination levels were less than 7 nanocuries per gram. In most cases extensive decontamination efforts brought contamination levels far below the 7-nanocurie limit.

Portions of the building within six feet of final grade that could not meet free release criteria were removed and disposed of as low-level waste.

The decision to leave some contamination in place is consistent with the findings of the Actinide Migration Evaluation, which determined that plutonium is insoluble and presents a negligible risk of migration in soil and groundwater.

Rocky Flats Decommissioning Update (Continued)



Building 771 Before



Building 771 After

SAN ONOFRE UNIT 1 DECOMMISSIONING UPDATE

San Onofre Nuclear Generating Station Unit 1 (SONGS 1) decommissioning project began in 1999 and is scheduled to be completed in 2008. Transfer of spent fuel to the Independent Spent Fuel Storage Installation (ISFSI) is approximately 83 percent complete. The project continues to execute well with over 58 percent of the decommissioning work complete. Major decommissioning milestones since last spring's update include:

- Completed fuel movement from SONGS 1 to the ISFSI,
- Demolished the Sphere Enclosure Building, the concrete structure built around the SONGS 1 containment sphere and removed the crushed debris off-site, and
- Staged and began demolition within containment

Fuel Movement to the Independent Spent Fuel Storage Installation (ISFSI) - On August 22, 2004, the last of the SONGS 1 spent fuel and greater than Class C material (reactor vessel internals) was moved into dry storage. To date, all SONGS 1 fuel stored at SONGS 1 and SONGS 3 have been placed into SCE-fabricated dry shielded canisters and successfully inserted into an Advanced Horizontal Storage Module on the SONGS Independent Spent Fuel Storage Installation. SONGS 1 spent fuel continues to be stored in the SONGS 2 spent fuel pool as the SONGS 1 spent fuel pool was not large enough to store all the unit's fuel. The last of SONGS 1 fuel that is presently stored at SONGS 2 is scheduled to be moved to the ISFSI beginning in early 2005.

Sphere Enclosure Building (SEB) Demolition - The 36-inch thick steel reinforced concrete building that surrounds the SONGS 1 containment sphere to provide additional shielding in the event of an accident has been removed. Nearly 4,000 cubic yards, or 8,000 tons of reinforced concrete have been removed. Only a small portion on the west side of the sphere will remain standing until after containment demolition, scheduled to take place in late 2005.

Looking Ahead - During the next twelve months, the project will focus on completing the following decommissioning activities:

- Dismantle SONGS 1 Spent fuel pool and building
- Move the SONGS 1 spent fuel from SONGS 2 to the ISFSI
- Remove the remaining containment internals
- Dismantle the sphere
- Dismantle and remove the turbine building

San Onofre Unit 1 Decommissioning Update (Continued)



SONGS 1 containment sphere stands exposed, following the recently completed Sphere Enclosure Building (SEB) wall demolition work

BIG ROCK POINT DECOMMISSIONING UPDATE

Major milestones have been completed at Big Rock Point resulting in dramatic physical change to the site. Among the major accomplishments in the past quarter are:

The reclamation of the plant's discharge canal. - As part of the restoration effort, the canal has been reclaimed and the shoreline returned to its original contour; the way it was before the plant was constructed.

The U.S. Army Corp of Engineers requested that only the large stones forming the breakwall jetty be left to help stabilize the beach and prevent erosion.

Site Characterization Coordinator Martha Kupka helped develop the canal characterization and remediation plan. Kupka donned a wetsuit early in the development of the plan to take submerged sediment samples. In all, more than 100 samples were collected and analyzed for remediation efforts. In June, workers installed a cofferdam to isolate the canal water from Lake Michigan.

Big Rock Point Decommissioning Update (Continued)

Once the dam was constructed, sump pumps were utilized to drain the canal dry. Before pumping, workers carefully transplanted fish living in the canal into Lake Michigan. "We found salmon, brown trout, perch, bass and even gobies in the canal," said Environmental Services Planner Jodie Reed. Goby are fish native to the Baltic Sea that have apparently been introduced into the Great Lakes by foreign vessels. Wildlife was abundant. Raccoons, blue herons, two eagles and a mink also resided in and around the canal area and would watch the restoration work with interest.

Once the canal was pumped dry workers began remediation efforts. Material identified for removal was scooped up, packaged, and shipped for disposal. The level of detail in the remediation effort was extraordinary - even rocks were power washed with water to remove sediment and algae.

When the entire canal area was remediated, it was roped off to isolate it from other work. On Aug. 10, Big Rock Point workers conducted a final status survey of the area while representatives of the U.S. Nuclear Regulatory Commission and Michigan Department of Environmental Quality observed. All three organizations also took soil samples to analyze in their respective laboratories. Shortly after the survey and soil samples confirmed that the former canal met all unrestricted use release criteria, it was backfilled with soil and beach stone to match the surrounding area.

Demolition of the former administration building. - Big Rock Point workers gathered and watched with great interest Sept. 3 as the great claw reached out, grabbed hold, and then ripped away at the metal siding. The claw was attached to an excavator and workers were watching the first choreographed moves to remove the plant's former administration building.

The 7,800 square foot, two-story building was prepared for demolition with extensive radiological surveys. After the building was internally stripped down to bare walls, workers began the methodical process of gridding all surfaces to guide their hunt for plant-generated contamination. After initial surveys and minor remediation work was completed, confirmatory surveys verified the building was ready for demolition. At this point, the entire building was roped off and declared off limits to workers to ensure it would not be cross-contaminated.

The demolition occurred in sections defined by vertical and horizontal steel support beams. First a section would be stripped bare of its sheet metal exterior, insulation, drywall, and other standard building material. A hydraulic cutter was then installed on the excavator to cut through 12-inch-thick horizontal support beams and vertical support columns.

Demolition of the plant's exhaust stack. For more than 40 years Big Rock Point's landmark red and white stack served as a visual aid to area boaters, letting them know Charlevoix was a little closer to home. Towering 240 feet tall, the concrete and steel reinforced stack was used during operation as an exhaust structure for the plant.

"After considerable discussion, the decision was made to segment and lower the stack rather than drop it by explosives," said Kurt Haas, plant general manager. "We felt that we would have better dust and debris control."

Once segmentation was chosen, a crane big enough to do the job was needed. Bierlein secured a \$1.75 million, 300-foot-tall crane that was delivered to Big Rock Point in segments – a total of 15 separate truckloads.

[Big Rock Point Decommissioning Update \(Continued\)](#)

"The crane is so tall that we had to secure Federal Aviation Administration permission to erect it," said Mick Papp, BNFL project manager, who is overseeing the project. "Lights were required and installed the length of the crane to ensure it was visible to aircraft."

A second crane - 269 feet tall - was also needed to hoist a steel basket that would carry two workers up and down the height of the stack.

The stack is being segmented into 12 separate sections. The sections range in height from 24 feet to 10.5 feet, and from approximately 14.75 feet in diameter down to six feet in diameter. The heaviest section weighs 39,200 pounds.

Physical demolition work began when the two workers in the basket were raised up to the first segmentation section and used a jackhammer to remove a 6-inch-wide ribbon of concrete all the way around the stack. A vacuum system drew dust and debris down into the stack and a catch basket was installed on the main basket to catch falling debris. Wooden wedges were installed in the newly opened area to provide structural stability.

The segmented section was then attached to the main crane by weaving two chains attached to a lifting beam through precut holes on opposite sides of the stack wall. Workers then used a torch to cut through the embedded steel rebar to free the section.

The main crane operator then lowered the freed section slowly to the ground where it was laid on its side. Workers then performed surveys and necessary remediation before the section was rubbleized and loaded into containers for disposal. When completed, more than 616,000 pounds of stack material will be demolished and shipped for disposal. The work is scheduled to be completed in November.



Demolition begins on the former administration building

Big Rock Point Decommissioning Update (Continued)



The discharge canal is shown before remediation efforts



Remediated canal returned to its original contour - much like it was before Big Rock Point was constructed

Big Rock Point Decommissioning Update (Continued)



Two large cranes are in place ready to be segmenting the plant's exhaust stack.

WEST VALLEY DEMONSTRATION PROJECT UPDATE

Exemplary Safety Performance – West Valley Nuclear Services Company (WVNSCO) received the “Legacy of Stars” Award from the U.S. Department of Energy (DOE) in September 2004. WVNSCO is the first and only DOE contractor to receive this safety designation for three consecutive years as a Star of Excellence contractor. The Star of Excellence is the highest VPP award for safety, and demonstrates a company’s full commitment to maintaining quality safety and health programs while demonstrating experimental approaches to maintaining a strong safety environment.

This designation is the latest in a legacy of safety accomplishments achieved by WVNSCO employees in recent months. WVNSCO also was recognized by its parent company, Washington Group International, with the Safe Project of the Year Award for 2003. Both awards were given in a year that saw the West Valley Demonstration Project (WVDP) achieve its best safety record in more than 20 years -- reaching more than 2.3 million consecutive work hours without a lost time work injury or illness and 93 consecutive weeks without a lost time work injury. The site’s Total Recordable Case Rate (TRC) is 0.3 and the Days Away/Restricted/Transferred Rate (DART) is 0.0.

West Valley Demonstration Project Update (Continued)

Dismantlement of the Vitrification Cell – WVNSCO has removed 146 of approximately 161 waste containers or vessels from the Vitrification Facility. Thirty-six waste containers have been shipped off-site for disposal. Work efforts this summer have focused on preparations to remove the three major process vessels from the vitrification cell: the Concentrator Feed Makeup Tank (CFMT), Melter Feed Hold Tank (MFHT), and the melter itself. Because the largest storage container for the components measuring 19 feet wide by 14 feet high and a loaded weight of nearly 200 tons, WVNSCO developed special equipment and handling procedures and modified the facility from which the components would be removed.



Transport of the empty CFMT container to the WVDP.

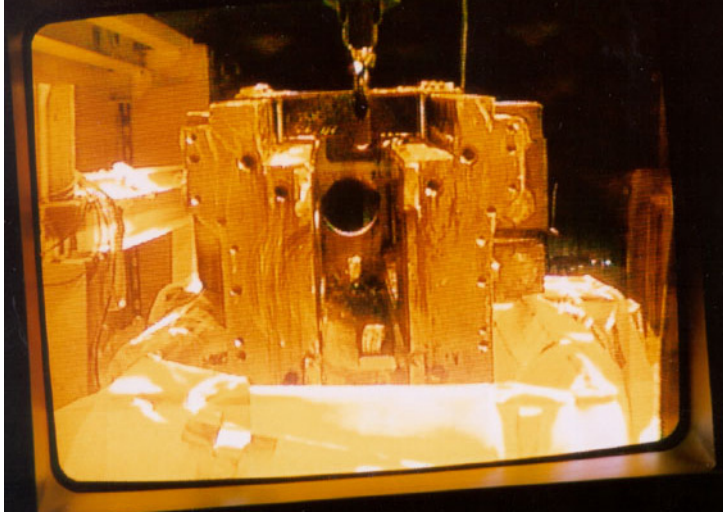
A gantry crane was erected outside the Loadout Facility and wooden floor cribbing was installed under a jack-and-slide system to disperse the weight of the waste containers during their removal to the gantry crane system. The CFMT container was delivered in August via a 19-axle, 190-foot-long truck and trailer that was driven by two drivers—one at the front and another at the back controlling the truck's rear steering. The CFMT was sprayed with a fixative, loaded into its container, grouted, and moved to an on-site staging area for storage. The MFHT packaging, currently under

way, will be handled in the same manner. The melter container fabricator completed a mock-up of loading a WVDP test melter into its container; the container will be delivered to the WVDP in October.

Progress on Decontamination of Extraction Cell-2 (XC-2) – XC-2 was used during forming spent fuel reprocessing operations to extract uranium and plutonium. The tall and narrow cell allows for hands-on decontamination. To date, WVNSCO has removed 8,520 feet of 9,000 feet of pipe, as well as 30 of 35 vessels. The largest of the vessels was 10 ft. by 6 ft. and the heaviest weighed 6700 lbs. Some of the columns contained in the cell were as tall as 43 ft. and contained loose internal debris. To secure the internal debris before cutting the columns, workers used foam sealant to fix contamination and epoxy to fill voids, fix contamination, and prevent the movement of internal debris during cutting. A guillotine saw, capable of cutting from 4 to 24 in. of material, proved effective in cutting the WVDP's thick columns. WVNSCO has been using a cable-suspended work platform called a Spider⁷ basket to move personnel down and back up through a hatch at the top of the cell to perform decontamination work. This decontamination project is scheduled to be completed in November.

West Valley Demonstration Project Update (Continued)

Progress on Cleanup of the Head End Cells – The Head End Cells are comprised of the Process Mechanical Cell (PMC) and General Purpose Cell (GPC), and were used in the fuel assembly shearing process during former spent fuel reprocessing operations. All decontamination work on the cells is performed remotely due to radiological conditions. To date, 111 of an estimated 124 drums of waste have been packaged from the cells. A recent significant accomplishment completed in the PMC was the removal of a four-ton shear, which was used to cut up spent fuel rods during former reprocessing operations. The shear was reading ~3000 R/hr to 5000 R/hr at the onset of its removal. After packaging of this large component in a shielded box, the completed waste package weighed 14 tons. The waste package is being stored on site.



Mock-up of the SBW solidification system at the vendor's shop.

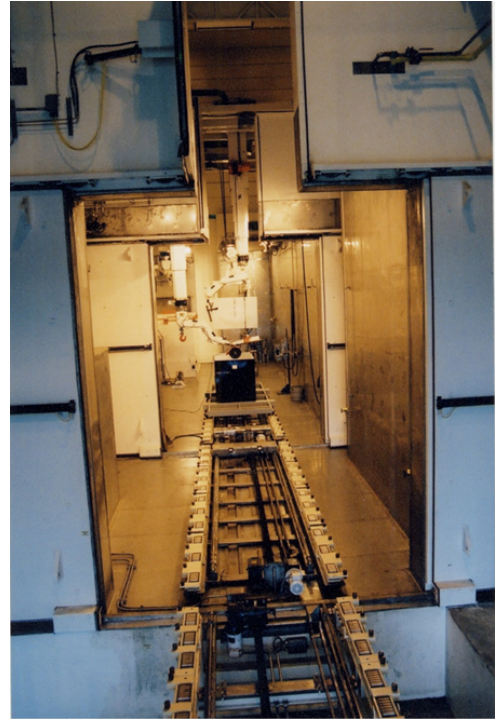
Progress on Sodium-Bearing Wastewater (SBW) Processing – SBW is low-radioactivity liquid remaining in the WVDP's two main high-level waste (HLW) tanks from HLW processing operations completed in 2002. Key radionuclides in the wastewater include cesium-137, strontium-90, technetium-99, uranium, and the hazardous constituent, chromium. In 2003, WVNSCO retrieved 130,000 gallons of SBW from the waste tanks and decontaminated the liquid using ion exchange. The liquid was then concentrated using an evaporator, and the resulting 11,500 gallons were placed in two stainless steel tanks. The remaining liquid is to be solidified, with the chromium stabilized and stored, pending future off-site shipment.

WVNSCO modified its Cement Solidification System, formerly used to solidify the liquid portion of the Project's high-level waste, to solidify the SBW. A vendor was selected to process the SBW, conducted extensive testing at its facility, and is currently installing additional equipment at the WVDP to solidify the material. Approximately 18 waste containers are expected to be generated during the solidification process. Each container will be 6 ft. by 6 ft. and have a maximum weight of 20,000 lbs. The project is scheduled to be completed in early November.

West Valley Demonstration Project Update (Continued)

Startup of the Remote-Handled Waste Facility (RHWF) – This facility has been constructed to size reduce, segregate and package for transport highly contaminated and obsolete nuclear process equipment, components, and materials generated during the course of the WVDP's 22-year history. After the completion of a rigorous testing and readiness program, the facility began radioactive operations in June 2004. The facility features a state-of-the-art bagless transfer system, high-purity germanium gamma assay system, powered dexterous manipulators, overhead and wall-mounted cranes, and floor conveyors. Operations are further supported by advanced sensor and control device technologies to maintain safe and efficient operations. Approximately 13 waste streams are to be processed through the facility. The first waste campaign was completed in July 2004; workers are now processing the second waste stream.

Here, a waste box is viewed through the RHWF's shield doors before radioactive processing began.



TROJAN DECOMMISSIONING UPDATE

Decommissioning activities in the Fuel Building and Auxiliary Building (e.g., concrete remediation, Fuel Building crane decommissioning, embedded pipe remediation, and operational surveys) were completed in July 2004. The Turbine Building and Control Building were also completed in July 2004. Additional areas where remediation was required were completed in September 2004.

Final Survey activities are in progress and the Final Survey is scheduled to be completed in October 2004. The remaining five Final Survey reports should be submitted to the NRC for approval by December 2004. To date, the NRC has approved the Containment Building Final Survey Report and the Main Steam Support Structure Area Final Survey Report.

Once the NRC has approved all of the Final Survey Reports and the Part 50 license is terminated, Trojan will be released for unrestricted use. The Trojan site will remain as an industrial facility owned by Portland General Electric (PGE).

Trojan Decommissioning Project Update (Continued)



Spent Fuel Pool – before



Spent Fuel Pool – after



Cask Load Pit – after



Safety Injection Pump Room



Demineralizer Vaults

FERMI 1 DECOMMISSIONING UPDATE

Fermi 1 continues sodium residual cleanup and other decommissioning activities. Over the last few months, a significant amount of time was spent in installing the system to react sodium residues remaining in the reactor overflow tank and sodium tunnel piping. Processing of this system's sodium was started September 27, 2004. Small-bore pipe is being removed from the Reactor Building lower level. Fourteen batches of sodium containing small-bore piping and other components have been processed in the reaction chamber this year. About 25,000 pounds of piping and components containing sodium have been processed in the reaction chamber to convert the sodium residues to sodium hydroxide and hydrogen so far during the project.

Removed plant components are being abated, as needed, and segmented. Installation of ground water monitoring wells was completed this year. So far, no plant-produced activity has been detected in the ground water samples.

The pictures show deconning a portion of the fuel gripper cask, which had been used to remove fuel from the reactor transfer rotor for transport in the cask car, and the giant cotton swab the crew fabricated for the cleaning.



HANFORD DECOMMISSIONING PROJECTS UPDATE

Demolition of 233-S Facility Completed

Fluor Hanford recently completed the demolition of Hanford's 233-S Plutonium Concentration Facility. This project represented the first open-air demolition of a highly contaminated plutonium processing facility at the Hanford Site, and possibly within the U.S. Department of Energy (DOE) complex, without first decontaminating surfaces to near "free-release" standards.

The 233-S facility was originally constructed in 1953 to further concentrate plutonium solutions. Process upsets occurred during the period of 1956-1963, including a fire that spread significant amounts of plutonium-based contamination throughout portions of the facility. Operations were terminated in 1967.

Hanford Decommissioning Projects Update (Continued)

In early 2003, facility characterization data and air-transport modeling were used in selecting demolition equipment and methods for suppressing potentially contaminated dust. Just before the demolition of the facility began in October 2003, smear sample measurements from inside the facility were as high as 20,000,000 disintegrations/minute/100 cm² (alpha contamination, primarily plutonium-239). The modeling efforts were also used to establish demolition operational boundaries and set locations for monitoring equipment.

A tracked excavator with a concrete shear was used for demolishing the less-contaminated building portions. To minimize the potential for release of contamination from the “process hood” portion of the building (four stories high, with the highest levels of contamination), diamond-circular saws were used to selectively cut large rectangular blocks of the reinforced concrete roof and walls. The rectangular blocks were pre-drilled for rigging and subsequent hoisting to the ground level via a mobile crane. In addition to commercial fixatives, a broad range of fogging and misting equipment (with and without additives) was used to control dust migration during the shearing, cutting, and waste loading operations.

Demolition of this facility was completed this past April and site stabilization was completed in June when a layered cap of sand, concrete, and gravel was placed over the demolition site. This facility—233-S—was one of the most contaminated facilities slated for demolition at Hanford, and the lessons learned should prove invaluable as Fluor crews demolish other contaminated facilities at the Hanford Site.



Photos of the 233-S Plutonium Concentration Facility; before demolition (upper left), during concrete shearing operations (upper right), during concrete cutting operations (lower left), and after site stabilization (right).

[Hanford Decommissioning Projects Update \(Continued\)](#)

A series of “Lessons Learned and Innovative Practices Fact Sheets” were developed and are included in a document entitled “*PROJECT EXPERIENCE REPORT – Demolition of Hanford’s 233-S Plutonium Concentration Facility*,” D&D-21434. This document can be obtained via Hanford’s Lessons Learned website at <http://www.hanford.gov/lessons/sitell/I104/233-S.rev1.pdf>

Spent Nuclear Fuel Removed from K East Basin – Water Draining Initiated

In early July, Fluor Hanford completed removing spent nuclear fuel from the 100-K East Basin. Over a 19-month period, 370 loads (over 2 million pounds) of irradiated uranium fuel were transferred to the 100-K West Basin for processing, using a unique Fuel Transfer System. The transfer system was used to load K East fuel underwater into shielded transfer casks. Once loaded, the casks were raised by a lift system, rinsed of contamination and placed inside over packs. The over packs were transported by truck the half-mile distance to the K West facility, and lowered in the K West Basin via an underwater elevator. The 370 loads contained more than 3,600 aged canisters of fuel and more than 25 million curies of radioactivity.

Several million gallons of contaminated water leaked from the 1.2-million-gallon K East Basin in the 1970s and 1993, thus bringing urgency to its final cleanout and closure. After the fuel was removed, crews began removing water from the basin to prepare for grouting the discharge chute between the K East Reactor and the K East Basin, beating a regulatory milestone to initiate water removal by one month. The placement of 500 cubic yards of a specially formulated cement mixture began in August and was completed in September. The grout displaced approximately 105,000 gallons of contaminated water—which was removed from the basin and treated—and further isolated a construction joint where contaminated water leaked from the basin in the past.



A pipe fitter adjusts hoses that fed a specially formulated cement mixture into the discharge chute between the K East Reactor and the K East Basin at Hanford.

[Hanford Decommissioning Project Update \(Continued\)](#)

Fluor Hanford continues to work on retrieving radioactive sludge, a byproduct of the highly corroded fuel that had been stored in the basin for decades. Crews have installed the first two of four containers in the K East Basin that will hold sludge retrieved from that basin (approximately 36 of the 50 cubic meters of sludge in both K Basins).

The Fast Flux Test Facility (FFTF): Fuel Assembly and Sodium Removal Underway

Fluor Hanford is deactivating the nuclear reactor that was built to develop and test fuel, materials, and equipment for the U.S. breeder-reactor program. Following extensive planning and training, FFTF crews restarted hot-cell operations for the first time in 10 years and disassembled a test fuel assembly this summer. Fluor Hanford continues washing and moving fuel assemblies from FFTF into storage casks, with 242 of 375 fuel assemblies removed as of the end of August.

Three major sub-projects to prepare for removing the sodium coolant from the primary reactor system were completed this past summer. In August, Fluor removed approximately 75,000 gallons of liquid sodium in the first phase of draining the reactor's primary cooling system. The remainder of the sodium in the primary cooling system will be drained in two phases, scheduled in November 2004 and spring 2005.



Spent nuclear fuel from the Fast Flux Test Facility is placed in an Interim Storage Area at Hanford.

[Hanford Decommissioning Projects Update \(Continued\)](#)

Plutonium Finishing Plant Demolition Begins

As of September, Fluor Hanford crews had removed more than 40 percent of the plutonium "held up" in aged equipment and continued removing contaminated equipment from the 190 glove boxes in the 14-acre complex of more than 60 buildings (before D&D began) known as the Plutonium Finishing Plant, or PFP. Seven buildings and a few minor structures have been demolished to date. Fluor Hanford expects to remove six additional buildings during the next year.

The project to stabilize and package approximately 20 tons of plutonium-bearing materials—completed in February—won Honorable Mention in the Secretary of Energy's fourth annual Project Management Award program recognizing outstanding performance and management. In addition, PFP recently received the Voluntary Protection Program Participants Association's Superior Star award for a consistently superior level of performance in meeting established safety and health goals, actively conducting outreach to others, and achieving an injury and illness rate 50% better than the industry average.

Approximately half of the plutonium materials that were packaged have been moved out of PFP to a storage location on the Hanford Site, pending shipment as transuranic waste to the Waste Isolation Pilot Plant in New Mexico. Several shipments of the material to WIPP have already been completed.

B Plant Ancillary Facilities Demolished

Fluor Hanford crews just completed demolition and disposal of 24 smaller construction facilities that were built over the years at the former processing "canyon."

U Plant and High-Risk Waste Sites

In addition to continuing D&D work at the K Basins and the Plutonium Finishing Plant, Fluor Hanford's D&D field work in the coming year will include the following:

- Deactivating and demolishing 10 contaminated facilities next to U Plant, a major processing "canyon" facility, utilizing many of the techniques that were used to successfully demolish the 233-S Plutonium Concentration Facility.
- Initiating remedial work at four high-risk waste sites, where contaminated liquids were discharged to the soil during Hanford's production years. Plans call for installing a special cap that will protect the groundwater from any contamination in the soil by preventing surface water from driving existing contamination deeper.

INEEL DECOMMISSIONING PROJECTS UPDATE

This fiscal year has been a very busy one for the 37 dedicated members of the INEEL decommissioning team. Working on Base and Challenge schedule milestones at the Test Area North (TAN) and Power Burst Facility (PBF) areas, they have completed decommissioning a total of 99 buildings and structures. This resulted in a foot print reduction of 243,912 square feet of buildings at the INEEL site. This work was accomplished without serious accident or incident.

The Test Area North facility is a large complex, which housed the Nuclear Aircraft Engine development program, Semiscale Test Program, SNAPTRAN reactor safety tests, Loss of Fluid Test program, and numerous fuel handling and storage activities. The majority of the facilities in this complex were built in the 1950s. The Power Burst Facility area, in addition to the PBF reactor, also contains the four reactors known as the Special Power Excursion Reactor Test (SPERT) program. These reactors were part of a series of safety tests conducted in the 1960s.

Other news at the INEEL includes the splitting of operations into cleanup and research factions to be managed by independent companies. The cleanup portion, designated as the Idaho Cleanup Project (ICP) will have the new operating contractor announced in early 2005. Mid November is the target goal for announcing the successful bidder for the Idaho National Laboratory (INL) research portion of the operations.

DOUNREAY NUCLEAR FACILITY DECOMMISSIONING

Work progresses at a rapid pace at the Dounreay Nuclear Facility in Northern Scotland. Efforts are nearly complete on Near Term Workplans and work is underway to solicit private contractors to perform many of the decommissioning operations. Much of this work is associated with the decommissioning of facilities which supported the Fast Reactor Program and the Dounreay staff have developed a huge amount of knowledge relative to the treatment and disposal of sodium and NaK. The international team which reviews the progress of the liquid metal treatment efforts plans to meet at the Dounreay site in October or November of this year to tour the research facilities and perform the latest review of research findings.

INTERNATIONAL DECOMMISSIONING PROJECTS

We continue to try and get up to date information on various decommissioning projects worldwide. DD&R members are advised that some information is available at the EC website for decommissioning. <http://www.eu-decom.be/siteentrance/>

RADWASTE SOLUTIONS MAGAZINE

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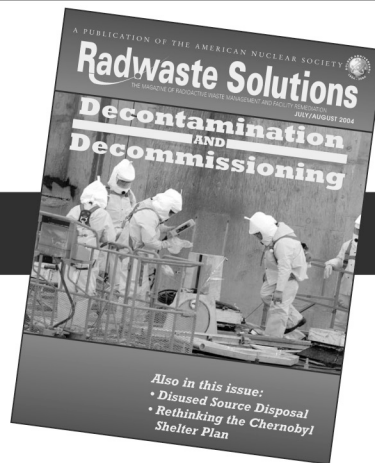
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