NEWSLETTER

DECONTAMINATION, DECOMMISSIONING, AND REUTILIZATION DIVISION

MAY 2003

NEWSLETTER CONTENTS

CHAIR'S MESSAGE

My previous message to you was about time. Now that my time as your Chair is drawing to a close, I will continue this theme and discuss the upcoming exciting time we are planning for San Diego, the changing times for our mission and your time.

EXCITING TIME - The DD&R Division is sponsoring the embedded topical meeting on Decommissioning and Spent Fuel Management at the annual ANS meeting in San Diego, June 1-5. More details follow in this newsletter. We have about 70 papers to be presented for just this topical meeting. It will be an EXCELLENT TIME to meet with your peers, make contacts, compare notes and take back ideas worth much more than the cost of attending the meeting.

CHAIR'S MESSAGE (Continued)

CHANGING TIMES - We will be updating our mission shortly (subject to approvals) to explicitly indicate that our Division's scope includes long term surveillance and maintenance at permanently shut down nuclear facilities, as well as the more traditional and active decommissioning activities. This change partially results from changes within the DOE, such as the creation of the Office of Legacy Management.

YOUR TIME - Please take the time to complete the questionnaire on our website, http://ddrd.ans.org. Do it TODAY, so you don't forget. We want to find out how we can better serve you, our members, now and during the changing times ahead in the decommissioning arena. If you are interested in participating in planning or governance activities, please let us know. We will be updating committee membership at or following the June meeting. If you are interested in public policy, meeting programs, scholarships, membership awards, finance, newsletter, or standards, WE WANT YOU. For many of these activities, you could participate from home, if attending meetings is a problem. Please email me at goodmanl@dteenergy.com, contact any of the other officers, or let us know through your questionnaire response. We are also looking for your time to support international decommissioning standards, as discussed later in this newsletter.

I want to thank Jim, Gerry, Paul, Jim, the executive committee and other committee chairs for THEIR TIME this year in perpetuating the continuing success of the Division. Thanks also to all our members who have or will be presenting papers at the national meeting, our upcoming topical and SPECTRUM. YOUR TIME is well spent in communicating your successes and lessons learned so that we all grow professionally and are more successful in all our endeavors.

I hope to see many of you having a GREAT TIME in San Diego,

Lynne Goodman

UPCOMING CONFERENCES

2003 Annual Meeting in San Diego California – June 1-5 at the Town and Country Resort and Convention Center

DD&R is sponsoring an embedded topical, along with cosponsor FCWM, entitled "Decommissioning and Spent-Fuel Management" at the 2003 Annual Meeting. We had an exceptional turnout of 75 papers submitted with eleven one half-day concurrent sessions scheduled over 3 days (Monday afternoon through Thursday morning). **Track 1: "Decommissioning – Progress, Lessons Learned and Industry Initiatives"** and **Track 2: "Spent Fuel and Waste Disposal Forum"** session schedule, chairs and room location is shown below. Rich St Onge, of Southern Cal Edison is the TPC. For specific conference and hotel information, check out the ANS web site at www.ans.org/meetings.

UPCOMING CONFERENCES (Continued)

Table of Sessions - Embedded Topical Meeting
Decommissioning and Spent Fuel Management
2003 ANS ANNUAL MEETING
San Diego, CA, June 1-5, 2003

		MONDAY	TUESDAY		WEDNESDAY		THURSDAY
AM	SESSION		1.1	1.2	1.5	1.2	1.4
	SESSION TITLE		Commercial Decommissioning Historical Review, Current Status, and Future Plans: Where has this fledging industry been and where is it going?	Technology and Project Successes in Decommissioning Activities: The best of our people, processes and performances in *Characterization*.	Decommissioning Cost Management and Performance Project Controls, Latest Tools, and Budget Performance Consideration	Technology and Project Successes in Decommissioning Activities: The best of our people, processes and performances in *General Technology*.	DOE Decommissioning Historical Review, Lessons Learned, and Current Status Report
	ROOM		Stratford T-60	Dover T-60	Stratford T-60	Dover T-60	Stratford T-60
	CHAIR		Jim Byrne	John McFee	Joe Carignan	Leo Lagos	Jim Rang
	ALT.		Jim Rang	Leo Lagos	Art Desrosiers	Jim Byrne	John McFee
PM	SESSION	2.3	1.2	2.2	1.2	1.3	2.1
	SESSION TITLE	Perspective on Radiological Low Level Waste Disposal and Treatment: Compacts Disposal Initiatives	Technology and Project Successes in Decommissioning Activities: The best of our people, processes and performances in *Decontamination*.	Advancement in Dry Cask Storage Technologies & Regulations: Examining the Industry's Needs & the Art of the Possible.	Technology and Project Successes in Decommissioning Activities: The best of our people, processes and performances in *Cutting, Demolition, and Material Handling.*	Licensing and Regulatory Initiatives in Decommissioning Activities: Current State of Affairs.	Dry Cask Storage Facilities – Sharing Our Experience and Updating Project Status
	ROOM	Stratford T-60	Dover T-60	Stratford T-60	Dover T-60	Stratford T-60	Dover T-60
	CHAIR	Tim Polich	Lynne Goodman	Don Eggett	Steve Bossart	Larry Camper	Michael Lackey
	ALT.	Tim Clepper	Steve Bossart	Gale Voyles	Alfredo Hey	Art Desrosiers	Carl Mazzola

UPCOMING CONFERENCES (Continued)

2003 ANS/ENS International Winter Meeting and Nuclear Technology Expo in New Orleans, LA - November 9-13.

DD&R supports the meeting theme of "Nuclear Science and Technology: Meeting the Global Industrial and R&D Challenges of the 21st Century" with 5 panel sessions planned in **Track 5 "Decommissioning and Reutilization**. The Call for Papers was issued and is available on the ANS web site at **www.ans.org/meetings**.

!4th Pacific Basin Nuclear Conference and Technology Exhibit "New Technologies for a New Era" in Honolulu, Hawaii, - March 21-25, 2004.

The American Nuclear Society is hosting the PBNC under the auspices of the Pacific Nuclear Council. Jim Rang at **jsrang@chartermi.net** and Steve Bossart, representing DD&R, are soliciting papers on D&D topics. For conference specifics and additional information, check out the web site at **www.ans.org/meetings**.

2004 Annual Meeting "International Congress on Advances in Nuclear Power Plants" in Pittsburgh PA, - June 13 – 17, 2004.

ANS will be celebrating its 50th anniversary at the Annual Meeting. In addition, 2004 is the 25th anniversary of the TMI – 2 Accident. DD&R will be supporting the conference theme with several sessions TBD.

Spectrum 2004 "Closure of Cold War Legacy Sites" in Atlanta GA, - August 22 –26, 2004.

Spectrum 2004, cosponsored by DD&R, is an international conference intended to highlight the technical challenge and successes involved in closing cold war legacy sites and reducing public risk. For conference specifics and additional information, check out the web site at **www.ans.org/spectrum**

Legacy Management

DD&R is considering incorporation of Long Term Surveillance and Maintenance (LTSM), i.e. long-term stewardship into the activities of the DD&R Division. LTSM seems to strengthen the "R" or "Reutilization" part of the division's charter. Long-term surveillance and maintenance protects people and the environment from residual contamination until such time that additional cleanup can occur or until hazards have been lessened through radioactive decay, isolation of hazards, or destruction of the hazards by natural processes. LTSM can be an important link between the ceasing of operations and reutilization of the site and facility. It is also proposed that DD&R include the human legacy issues associated with the shutdown of sites and reduced work force needed at shutdown sites, and the impact to the workforce and local community to a greater extent than previously covered.

MEMBERSHIP QUESTIONAIRE

To assist our division in improving our effectiveness, as well as ensuring we are meeting the present and future needs of our members and the nuclear community, DD&R Division members are requested to visit the DD&R website (http://ddrd.ans.org) and fill out and submit the linked questionnaire. Your comments and suggestions will assist us in our continuing effort to improve our division.

DD&R WEB PAGE (http://ddrd.ans.org)

Web Content: John Gunning Web Master: Hanna Shapira

The DD&R web site is continually updated to reflect ongoing events and changes within the division. As mentioned above, a questionnaire was recently developed and placed on the website, which members are encouraged to fill out. The intent of the questionnaire is to assist the division in improving its effectiveness, as well as ensuring it is meeting the present and future needs of the members and the nuclear community.

Additional website changes include updating the listing of upcoming meetings, as well as posting the session schedule for the DD&R sponsored embedded topical meeting at the June 1-5, 2003 meeting in San Diego. The embedded topical meeting includes Track 1: "Decommissioning – Progress, Lessons Learned and Industry Initiatives" and Track 2: "Spent Fuel and Waste Disposal Forum" which includes 75 papers over three days.

DD&R DIVISION SCHOLARSHIP

The DD&R Scholarship Winner for 2003 has been selected.

The Division's Scholarship Committee, under the Chairmanship of Paul Ziemer, is pleased to announce that Cindy Fung of the University of Florida is this year's Scholarship winner. Cindy, who is completing her junior year in the Department of Nuclear and Radiological Engineering, is originally from Venezuela.

In addition to an outstanding academic record, Cindy has served as Vice-President of her ANS Student Chapter and has been inducted into the Alpha Nu Sigma Nuclear Science and Engineering Honor Society at the University of Florida. She has also served in several leadership posts on the Engineering Council and in the Engineering and Science Fair. While at the U. of Florida she has been on the Dean's List, the President's Honor Roll, a Gates Millennium Scholar, and a Rotary Outstanding Citizen.

Cindy, who is fluent in Spanish, Chinese, and English, states that she plans to go on to graduate school and specialize in some area of nuclear power production. Last summer she was an intern at Entergy-RBS in Louisiana. This summer she hopes to serve as an intern either for Westinghouse or for Global Nuclear Fuels.

Cindy has been invited to be the guest of the DD&R Division at the ANS Annual Meeting this summer in San Diego. We are looking forward to seeing her there.

Our heartiest Congratulations to Cindy Fung!

NUCLEAR MATERIALS CLEARANCE

THE ANS HAS RELEASED ITS POSITION STATEMENT ON NUCLEAR MATERIALS CLEARANCE.

A position statement on "Clearance of Solid Materials from Nuclear Facilities" was approved by the ANS Board of Directors in March 2003. It is located on the ANS web site at: http://www.ans.org/goto/nad.cgi?id=1049436000-2. NRC will hold hearings on the issue in May 2003.

DECOMMISSIONING STANDARDS COMMITTEE

The ANS Nuclear Facilities Standards Committee (NFSC) and ANS-23 Decommissioning and Site Remediation Subcommittee continue to work on three active DD&R standards. They are:

ACTIVE: 1) Decommissioning of Nuclear Production and Utilization Facilities: Defueled Safety Analysis and Emergency Plan
2) Decommissioning of Nuclear Production and Utilization Facilities: Operator Training
3) Validation of Data from Radiological Analyses for Use in Environmental Remediation

These standards are in the process of moving toward final draft completion. Anyone interested in commenting on the final drafts will be given that opportunity and should notify Don Eggett at dreggett@aesengineering.com if you are interested in these final reviews.

Discussions with the NRC were held in November 2002 to determine what D&D standards the NRC believes will presently provide the most benefit to the industry and what standards they would be willing to support development and review. Their feedback was to continue the completion of the three existing standards listed above and to focus on standards that provide a "dose approach" to site remediation standards including the consideration of developing a standard on Automated Survey Scanning Technology for Site Characterization. Your thoughts on the latter will be greatly appreciated. In addition, discussions centered on incorporating risk insights into standards and the development of performance-based standards

The ANS NFSC is also presently taking on an initiative to look for ways to expand the development of ANS standards that could be converted or developed as joint US/International standards in the form of ANS/ISO standards. As part of this effort, the US Nuclear Technical Advisory Group (NTAG), which coordinates the US position with respect to ISO Technical Committee TC85 on Nuclear Energy needs volunteer experts to develop and maintain international standards on nuclear fuel technology, radiation protection, and radiation processing. Manpower is needed in the following areas:

Nuclear Fuel Technology
Radiation Protection
Fuels fabrication
Soil contamination
Waste conditioning
Environmental cleanup
Waste disposition

International transport of radioactive material
Fission yields
Portal detection of radioactive material
Processing Plutonium fuels
Cask design
MOX fuels

Please contact Suriya Ahmad (708-579-8269) at ANS headquarters or myself (Don Eggett) if you are interested in participating in the development of these standards and for further information on any of the above areas.

Don Eggett – ANS 23 Chair 630-357-8880, x18 email dreggett@aesengineering.com

MEETING CONSOLIDATION

DD&R will be making a presentation to the Fuel Cycle and Waste Management Division program committee in June on future joint consolidation activities. In the past year, we consolidated our DD&R Division executive conference with SPECTRUM 2002 and our decommissioning topical meeting with the 2003 annual ANS meeting as an embedded topical. These initial steps demonstrate that consolidation can be successfully accomplished. We also were more active with Waste Management this year and will be presenting awards for best papers at WM for the first time. We have much more work to do in our consolidation efforts and have been slow moving forward. Hopefully, the engine is now moving again and we will pick up speed to make consolidation a reality.

RANCHO SECO DECOMMISSIONING UPDATE

Spent Fuel Pool

All 11 Spent Fuel Racks have been removed form the pool and shipped to Envirocare. The water has been drained and preparation has begun for removal of the liner. Concrete characterization has begun via core bores to determine the extent of concrete contamination due to liner leaks.

System Dismantlement

System dismantlement continues in the Auxiliary and Reactor Buildings. The major remaining Auxiliary Building systems include 1 of 7 underground liquid waste tanks and the ventilation system, which are currently working. Ventilation and small piping systems are being removed in the Reactor Building.

Large Components

The pressurizer and vessel head are scheduled to ship to Envirocare first quarter of 2004. Preparation of these components is in progress. The steam generators should go to Envirocare by rail in 2005 but will require cutting in half. Steam Generator penetration closures are being installed and the necessary transportation exemptions are being pursued. Detailed characterization of the vessel and internals is in progress. It is expected that an RFP will be issued later this year for internals segmentation once the cut plan is developed. The current plan calls for vessel segmentation as well.

Outside Components

Work has begun on dismantlement of the large outside tanks and remaining contaminated outside systems. These include the Borated Water Storage Tank, the Demineralized Reactor Coolant Storage Tank and the Spent Fuel Cooler. This work should be completed this year.

Site Re-Powering

SMUD is still waiting for final State approval for a 500 MW natural gas fired plant on utility property south of the current security fence. The plant will make use of the switchyard and site water supply.

RANCHO-SECO DECOMMISSIONING UPDATE (Continued)

The Last Fuel Rack Out Of The Pool

Removing Control Rod Drives Prior to Head Removal

MAINE YANKEE DECOMMISSIONING UPDATE

Decommissioning began in 1997 and is scheduled to be finished in 2005. The project is about three quarters complete.

Safety is the number one priority and remains strong. With a work force of about 360 and 4.2 million hours worked on the project there have been just 7 lost time injuries overall. Nearly 850,000 hours have been worked since the last lost time injury. The project is also doing well in the area of worker dose which is at about 43% of the U.S. Nuclear Regulatory Commission limit of 1115 person-REM.

Major projects include: preparations for the barge shipment of the reactor pressure vessel to the Barnwell, South Carolina disposal facility, interior demolition of the containment building, forebay remediation, and the transfer of spent nuclear fuel from wet to dry storage.

The reactor pressure vessel is the last large component at the site. The RPV was placed in its shipping container and removed from containment last September. Since then it has been stored in the backyard on its transport skid waiting for sufficient water levels in the Savannah River to permit barge shipment. Heavy rains in South Carolina have made transport possible and the shipment is expected to occur in early May.

Last December Maine Yankee used explosives to demolish its 330 ton containment polar crane. Much of the winter was spent cutting up, packaging and shipping the crane to the Envirocare facility in Utah. With the crane removed the focus has shifted to the crane wall. Containment demolition and clean up is expected to be ongoing into the fall of 2004.

Remediation of the forebay, the plant's water discharge area, will take place this year. Equipment is now being mobilized to remove contaminated material. When the area has been remediated in accordance with the License Termination Plan, the forebay will be backfilled with the hope of establishing a salt water marsh area.

Progress continues in the fuel transfer project with 16 of the 60 canisters moved to the dry cask storage facility as of April 19. Fuel transfer is expected to be complete in spring 2004.

For further information on the Maine Yankee decommissioning project visit www.maineyankee.com or contact Public and Government Affairs Director Eric Howes at (207) 882-5875.

MAINE-YANKEE DECOMMISSIONING UPDATE (Continued)

Maine-Yankee Reactor Pressure Vessel in Storage Container Outside Containment

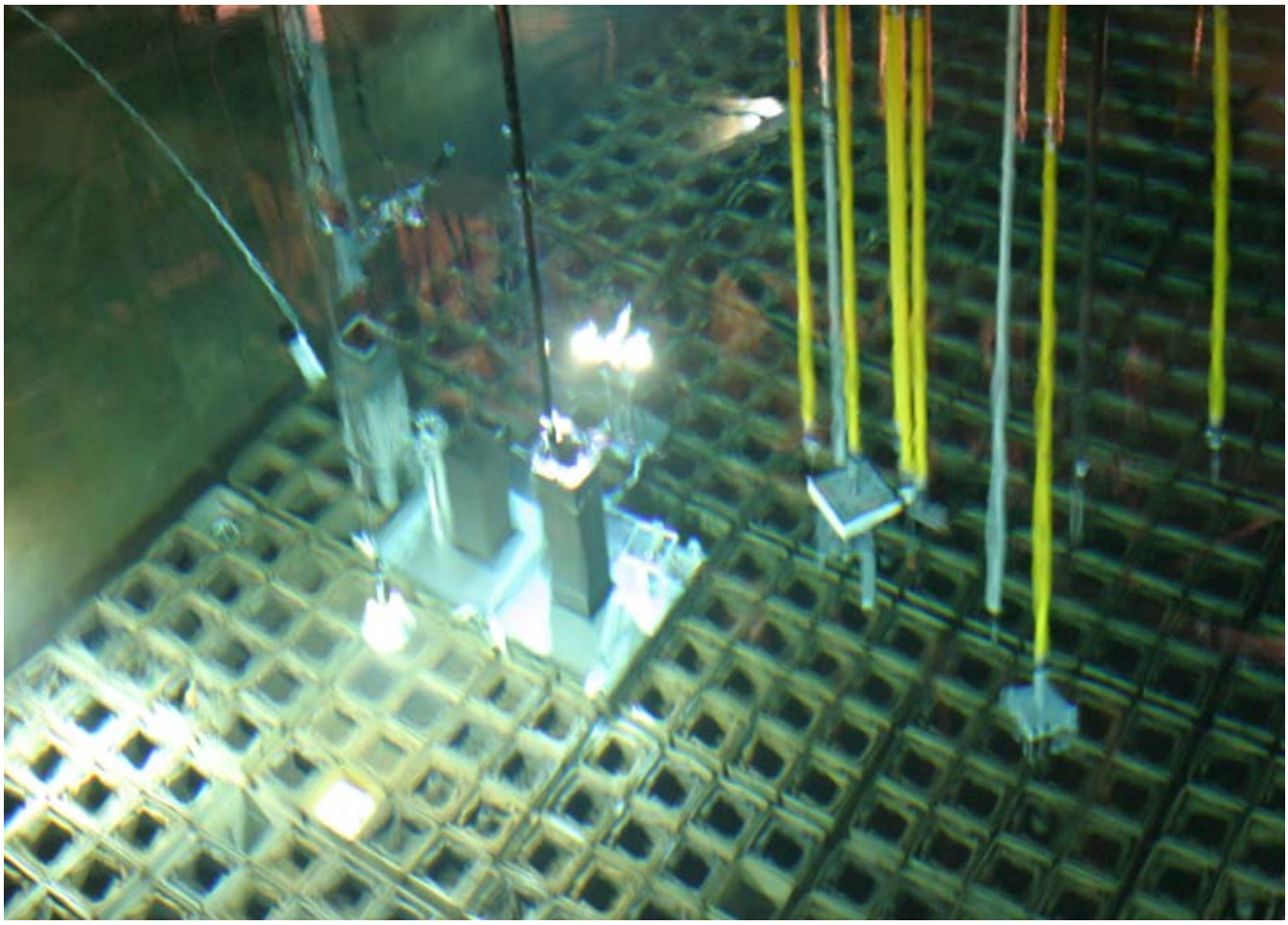
CONNECTICUT YANKEE DECOMMISSIONING UPDATE

Decommissioning - Connecticut Yankee continues to enjoy an excellent safety record with more than 2,000,000 hours worked without a lost time accident as of April 2003. Decommissioning is approximately 65% complete. The drain down of the reactor cavity is complete. The cavity walls, floor, and transfer canal have been decontaminated and preparations are underway to remove portions of the cavity wall to facilitate the removal of the reactor pressure vessel (RPV) later this year. The pump-out of the reactor pressure vessel is also complete. Work continues on tank farm demolition activities. To date, five of the seven tanks have been removed. Phase 2 of the tank farm removal work is scheduled to begin in late April or early May. It will involve asbestos removal, decontamination, lockdown, and demolition of the two remaining tanks.

CONNECTICUT-YANKEE DECOMMISSIONING UPDATE (Continued)

On November 25, NRC staff approved CY's revised License Termination Plan and Safety Evaluation Report. On January 23, 2003, CY implemented the NRC-approved License Termination Plan. The Atomic Safety Licensing Board held a hearing in New Britain, CT during the week of March 10, 2003 on the approved CY License Termination Plan. The remaining contentions from the Citizens Awareness Network were discussed at length. A ruling by the ASLB and final order is expected by August 2003.

Dry Fuel Storage - Grading and compaction, and load testing of the ISFSI haul road are complete. Construction of the ISFSI storage pad and security fencing has been completed. Construction of 43 vertical concrete storage containers (VCCs) is complete. ISFSI site work, which was suspended during the winter months, was resumed in March. The monitoring facility building is scheduled for delivery and erection in mid-April. The remainder of the ISFSI infrastructure will be installed at that time. Preparations are also being made to route outside power to the ISFSI site and electrical and security modifications are scheduled to begin in mid-May. Spent fuel pool building modifications in preparation for fuel transfer operations are complete. Fuel assembly inspections have been completed and fuel reconstitution began in April. Fuel transfer operations are expected to begin in the fall of 2003.



Fuel Reconstitution Operations

CONNECTICUT-YANKEE DECOMMISSIONING UPDATE (Continued)

Cavity Prep Work after Drain Down

YANKEE ROWE DECOMMISSIONING UPDATE

Decommissioning - Site safety performance remains excellent at Yankee Rowe with more than 925,000 safe hours worked as of April 2003. Yankee awarded a contract in March 2003 to DEMCO, Inc., a decommissioning and environmental management company based in West Seneca, New York, to take down and remove the major buildings and structures remaining on the Yankee Rowe site. Starting this year and continuing through the fall of 2004, DEMCO will dismantle or demolish almost all of the above grade structures on the site. This will not include any structures or buildings along the shoreline or those associated with dry fuel storage. DEMCO will also be responsible for transporting the building debris to a licensed disposal facility.

Preparation of the License Termination Plan is underway. Yankee expects to submit its LTP to the NRC in November of 2003. Conservation Law Foundation, a New England based environmental advocacy organization, continues to assist Yankee with the development of a non-radiological Site Closure Plan for the Yankee Nuclear Power Station. The Site Closure Plan will be integrated with the License Termination Plan.

Fuel Storage Rack Removal from Spent Fuel Pool

YANKEE ROWE DECOMMISSIONING UPDATE (Continued)

Dry Fuel Storage - Yankee Rowe is in the final stages of fuel transfer from wet to dry storage. As of March 2003, fourteen of Yankee's sixteen Vertical Concrete Containers (VCC's) had been successfully loaded and transferred to the dry fuel storage facility. The loading and transfer of the final spent fuel canister and the Greater Than Class C (GTCC) canister is scheduled for May 2003 after the completion of accessible fuel rack removal and spent fuel pool clean-up activities. Yankee's Fuel Transfer Operations Contractor, NAC International, is scheduled to demobolize in July.

Fourteen Loaded Vertical Concrete Containers on Fuel Storage Pad

ROCKY FLATS DECOMMISSIONING UPDATE

The Rocky Flats landscape is changing almost daily as the cleanup reaches 70 percent completion. More fences, structures and buildings are coming down, waste is being packaged and shipped at unprecedented rates and more environmental remediation is being completed than was thought possible just a few years ago.

Innovative strategies and safe work practices continue to drive the $7 billion closure project, which is operating below cost and ahead of schedule. A key factor in meeting and exceeding these goals is a commitment to the belief: "By focusing on working safely every day, the schedule will take care of itself."

Rocky Flats will mark the end of an era during 2003, when the last nuclear operations are concluded in Building 371. The processing, packaging and removal of all special nuclear material on site is expected to be completed by the end of the year.

Significant D&D accomplishments have been achieved in all four major nuclear buildings, including removing the last gloveboxes from the buildings 771 and 776/777 complexes. To date, the site has decontaminated and removed more than 900 of the 1,324 highly contaminated gloveboxes on site.

ROCKY FLATS DECOMMISSIONING UPDATE (Continued)

Between January and March of this year, site workers made more than 92,600 entries into radiological areas and completed nearly 340,000 radiological work hours, without a significant radiological event. Building 771, once called the most dangerous building in America, has been turned over to the demolition contractor for final decontamination work.

Demolition crews have been busy at Rocky Flats, demolishing 270 of the 805 buildings, facilities and structures that will be eliminated from the site before final closure. Building 125, a calibration laboratory; Building 441, a uranium and beryllium operations support building; and Building 112, Rocky Flats' first cafeteria building, are a few of the most recent to be demolished.

Rocky Flats continues to lead the nation in radioactive waste shipments. For the third straight year, the site was the top shipper of transuranic waste to the Waste Isolation Pilot Plant (WIPP) near Carlsbad, N.M., sending the site's 900th shipment in April. And, for the fourth year in a row, Rocky Flats shipped more low-level waste to the Nevada Test Site than any other Department of Energy (DOE) facility. Rocky Flats is averaging approximately 70 waste shipments per week and last year shipped more radioactive waste than it had the previous three years combined. Significant achievements have been reached in environmental remediation as well. Eight of the top 10 highest risk remediation sites have been completed.

Rocky Flats' largest and most complex soil remediation site to date, the 903 Pad, is one-third of the way done and scheduled for completion by October. The 903 Pad was the site where drums containing plutonium-contaminated cutting oils were stored during the 1950s and 1960s and eventually leaked.

Rocky Flats recently completed a multi-year effort of study, discussion, public comment and negotiation to set the cleanup levels for plutonium in the soil. DOE, the Colorado Department of Health and Environment (CDPHE) and the Environmental Protection Agency agreed on new soil action levels that call for stricter surface requirements while applying an innovative, risk-based approach for cleanup below grade. The residual soil action level (RSAL) for the first 3 feet of soil is set at 50 picocuries/gram, a level that is 13-times lower than the 651 picocuries/gram standard set previously. Contamination below 3 feet and old process piping below 6 feet would be left in place, unless a risk screen determines it poses an unacceptable risk.

A number of significant challenges lie ahead. Radiological safety continues to be a priority, while industrial hazards are becoming more common as demolition work increases. Constant vigilance is required to ensure the safety of everyone.

The site is still searching for final disposal solutions for approximately 5,000 drums of wastes that currently don't have final disposition paths. These "orphans" include >10 picocuries/gram mixed waste, PCB liquids and solids and depleted uranium fines contaminated with volatile organic solids, cyanide and cadmium.

And, although significant D&D progress has been made, unique challenges remain, such as to safely dismantling the highly contaminated Building 776, where a 1969 fire spread contamination throughout the building.

Finally, nearly 4,000 highly skilled employees are working themselves out of a job. A new workforce transition program is underway to help them find a new future after Rocky Flats.

ROCKY FLATS DECOMMISSIONING UPDATE (Continued)

Steelworkers dismantling the last, highly contaminated glovebox in Building 771..

Although most of the contaminants are limited to the first 2 feet of soil at the 903 Pad, up to 4 feet of contaminated soil is being removed for packaging and disposal as low-level mixed waste.

BIG ROCK POINT DECOMMISSIONING UPDATE

A fuel free spent fuel pool at Big Rock Point was declared at 3:35 a.m. on March 21. The accomplishment highlighted 1st quarter restoration progress.

Employees loaded the 441st and final fuel bundle into dry fuel storage canister number 7 on March 4. They then began the painstaking task of moving empty fuel racks and other equipment to search the fuel pool for any loose fuel pellets. None were found and the pool was officially declared fuel free.

The first fuel bundle was loaded into dry storage in November. Throughout the five-month campaign employees staged, loaded, vacuumed dried and moved seven 167-ton containers to the Independent Spent Fuel Storage Installation (ISFSI) located on plant property.

Performance continued to improve throughout the process, particularly in dose recorded per load. A total of 833.11 mr was recorded to load the first canister. Dose for each succeeding canister was lowered to the point where canister six totaled only 482.93 mr. Canister seven totaled 557.33 mr due to the extra time required to declare the spent fuel pool fuel free.

"We've been talking about moving fuel for 10 years," said Bill Trubilowicz, project manager. "Getting the fuel to the pad has always been the most significant decommissioning milestone."

"We couldn't have asked for a more successful campaign," said site general manager Kurt Haas. "Having all of the fuel in dry storage is changing the complexion of our project. We are now moving into a heavy dismantlement phase during which we'll remove the remaining major components and all buildings."

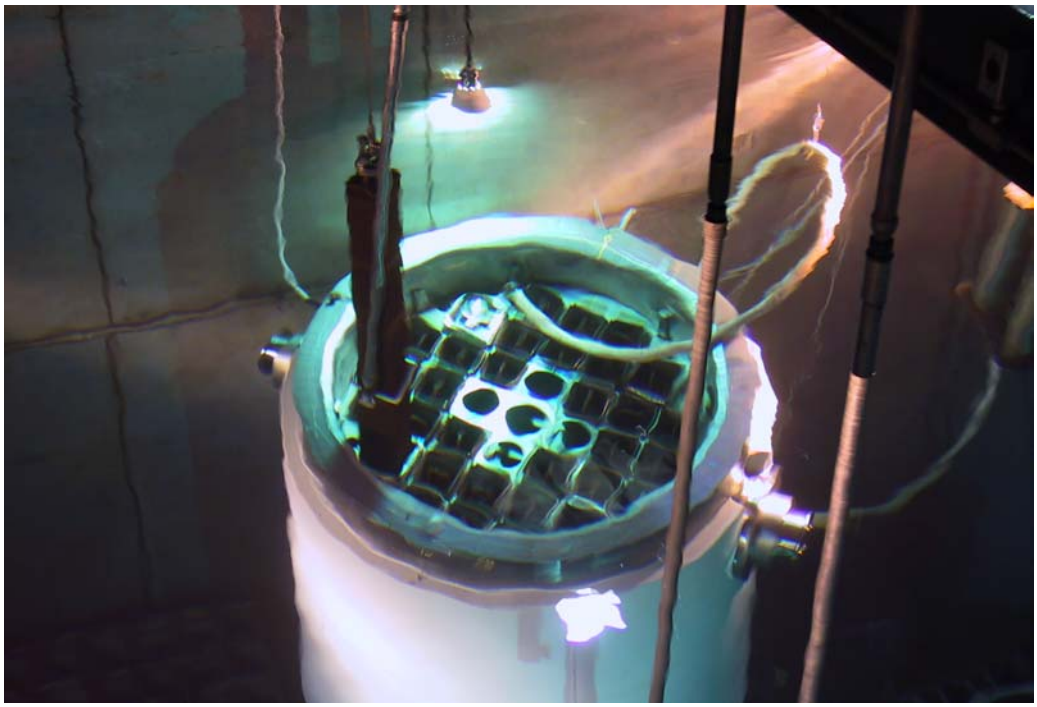
Big Rock Point employees are currently loading an eighth cask with greater than Class C waste. Once all material is removed, the fuel pool will be drained, clearing the way for reactor vessel and steam drum removal.

The reactor vessel and steam drum are scheduled to be removed, packaged and shipped for disposal later this year.

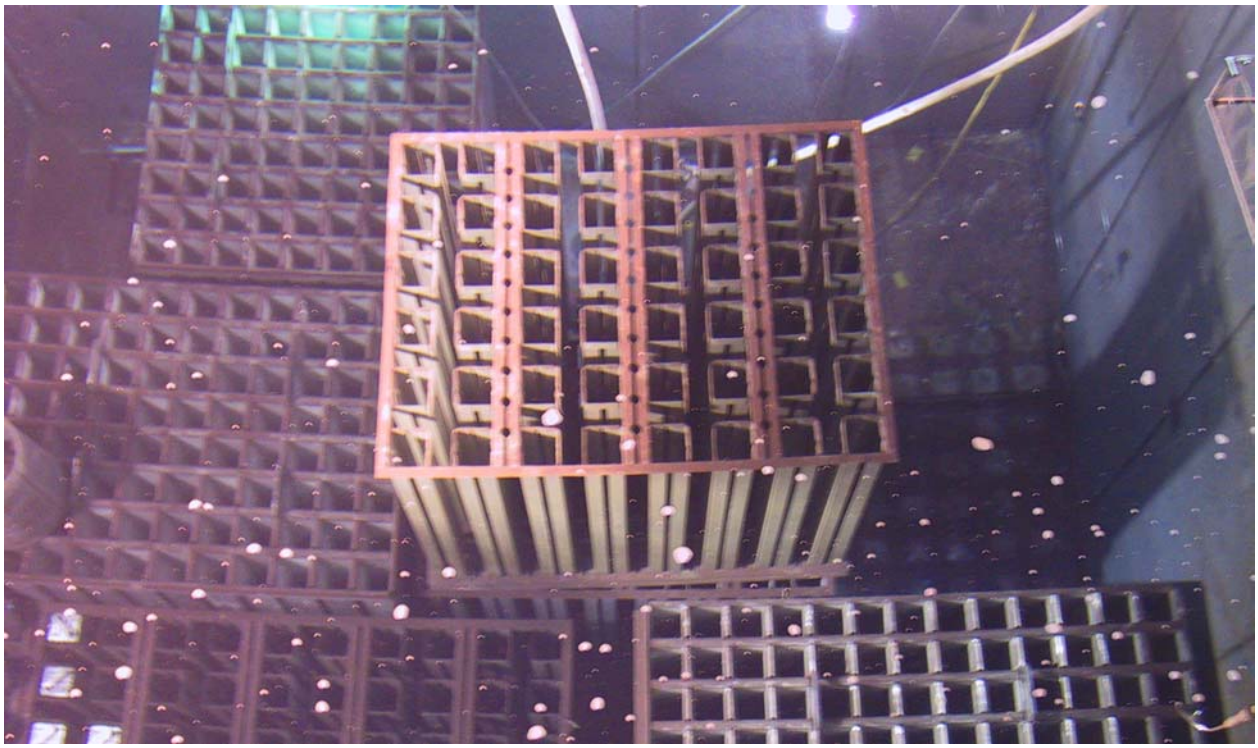
The movement of all fuel to the ISFSI has resulted in security changes at Big Rock Point. While the extensive security measures required by the NRC are in place at the ISFSI, the fenced area of the plant, - former the protected area – has now been designated an industrial work area. While radiological work permits are still necessary for much of the remaining work, the site has now basically been turned into a deconstruction project.

Another key milestone was the design, construction, testing and site approval of the Gardian bulk assay system. The system is a combination of scintillation style truck monitoring and gamma spectroscopy and will be used as a final check to ensure only clean debris is shipped for disposal in an industrial landfill. Shipping is scheduled to begin in late April, or early May.

BIG ROCK POINT DECOMMISSIONING UPDATE (Continued)



The 441st and Final Fuel Bundle is lowered into the upper fuel basket of Canister #7



Fuel Rack Removal from the Spent Fuel Pool

BIG ROCK POINT DECOMMISSIONING UPDATE (Continued)

Dry Fuel Storage Container #7 in Transit to Fuel Storage Facility

HANFORD PLUTONIUM REACTORS DECOMMISSIONING UPDATE

Decommissioning of Hanford's DR Reactor was completed in late fiscal year 2002. It is the second of Hanford's nine surplus plutonium production reactors to be placed in interim safe storage in a process known as cocooning.

Cocooning involves removing all of the reactor building except for the five-foot think shield walls surrounding the reactor core. All openings and penetrations are sealed and a 75-year roof is placed over the remaining structure. The facility will be equipped with heat and moisture sensors, monitored from a remote location. Once every five years, workers enter the facility to conduct a visual inspection and make any necessary repairs. The reactors will remain in the cocooned state for up to 75 years, giving radiation levels in the reactor cores time to decay to relatively manageable levels and giving the U.S. Department of Energy and regulators time to decide on final disposal.

HANFORD PLUTONIUM REACTORS DECOMMISSIONING UPDATE (Continued)

Work is complete or underway on five reactors:

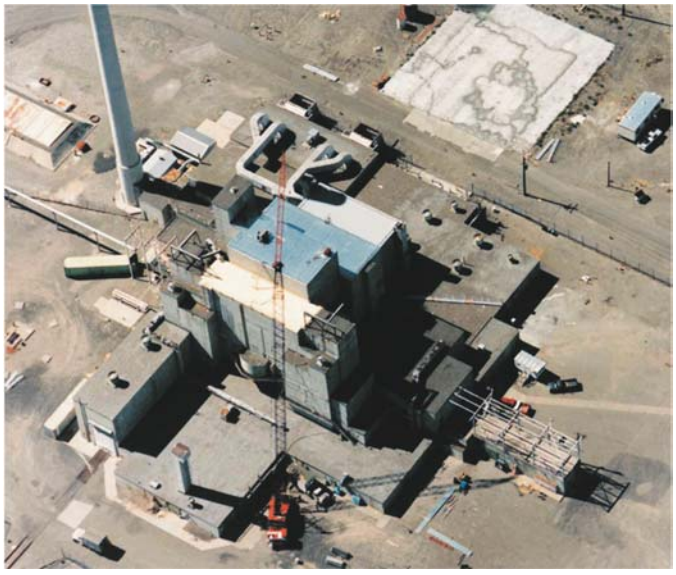
- C Reactor was cocooned in 1998. Workers recently entered the structure for its "five-year checkup" and found it in pretty much the same condition as when they left it.
- DR Reactor was cocooned in September 2002.
- F Reactor footprint reduction demolition has been completed and a new roof is being installed. Cocooning will be completed in September 2003.
- D Reactor footprint reduction demolition has been completed and procurement is underway for the roof subcontract. Cocooning will be completed in 2004.
- H Reactor demolition is in progress and clean out of the fuel storage basin will continue through most of 2003. Cocooning is scheduled to be completed in 2004.

Work has not begun on the remaining four reactors:

- KE and KW reactor work will begin sometime after fuel is removed from the fuel storage basins. Both reactors are set to be completed in 2011.
- N Reactor is scheduled to be completed in 2012.
- B Reactor, the world's first operating reactor, is not scheduled to be cocooned. It is being maintained in a safe condition until the DOE decides whether to turn the National Historic Landmark into a museum or to cocoon it.

A major element in project success has been the ability to work on several reactors in tandem, moving crews from one reactor to the next as tasks are completed, said Bechtel Hanford's Project Engineer Mark Morton. The other element is an excellent safety ethic among the workers, who have not had a lost-work day since cocooning work began in 1996.

Bechtel Hanford manages Hanford's ER Project for DOE, along with preselected subcontractors CH2M Hill Hanford and Eberline Services Hanford.



DR Reactor Before

DR Reactor After

HANFORD PLUTONIUM REACTORS DECOMMISSIONING UPDATE (Continued)

Cocooning is the term used for demolishing the entire reactor complex down to the five-foot thick cement shield walls surrounding the reactor core, sealing all openings and installing a new roof. The footprint of the reactor building is reduced 80 percent during cocooning.

Installing a 75-year roof over the remaining reactor building was one of the final tasks during cocooning of DR Reactor. Cocooning of the reactor was completed in September 2002.

After F and H reactors were deactivated, spent fuel was removed from the storage basins and the basins were filled with sand and river cobble. Suspecting that fuel might be found at the bottom, Environmental Restoration Project workers enacted a rigorous plan to safely locate, remotely retrieve, ship and store any fuel elements discovered during excavation. Seventeen intact elements and one fragment were discovered at F Reactor. Two have been uncovered at H Reactor and workers expect to find more before clean out of the fuel storage basin is completed in December 2003.

TROJAN NUCLEAR PLANT DECOMMISSIONING UPDATE

ISFSI Project - The 10 CFR 72 license amendment request for the Trojan Independent Spent Fuel Storage Installation (ISFSI) was submitted to the NRC on October 29, 2001, and was approved by the NRC on October 23, 2003. This document reflects the Holtec International current design and the components from the Trojan ISFSI (such as the existing ISFSI pad, concrete casks, and transfer station).

On-site mobilization of Holtec personnel started in late July 2002. Procedures and training materials were developed and implemented. The training effort culminated in a successful NRC-observed dry run of fuel loading activities in early December. The last MPC was delivered to Trojan on January 3, 2003.

The MPC loading began on December 30, 2002. As of April 9, 2003, 13 of the 34 MPCs have been successfully loaded. Twelve MPCs are in Concrete Casks on the storage pad and the thirteenth is undergoing vacuum drying.

After loading 33 MPCs, the spent fuel racks will be removed. The last MPC will be closed after the racks have been removed and the Spent Fuel Pool has been cleaned and inspected. The loading campaign is expected to be completed in October 2003.

FERMI 1 DECOMMISSIONING UPDATE

Fermi 1 successfully processed a cooling system containing NaK residues in February after more than a year of planning and preparation. NaK is a highly reactive mixture of sodium and potassium. The NaK was converted to NaOH, KOH, and hydrogen gas. We vented the hydrogen, neutralized the hydroxides, emptied the system, and cut it into pieces. Planning and setup is underway for other sodium and NaK containing systems. We also completed removal of the waste gas tanks and disassembled the fuel handling assembly this winter. Planning work is underway for the License Termination Plan.

SAXTON DECOMMISSIONING UPDATE

Concrete removal from the Saxton Containment Vessel (CV) was completed by TLG Services in October 2002. Since that time Saxton personnel have been decontaminating the interior of the CV and have recently completed the Final Status Survey of its bottom bowl. Following NRC Review of the Final Status Survey Results, the bottom bowl will be backfilled in mid-May to provide a working platform for the installation of scaffolding to allow completion of remediation and Final Status Survey of the vertical sides of the CV.

SAXTON REACTOR DECOMMISSIONING UPDATE (Continued)

Another decommissioning challenge for Saxton was how best to survey for reuse, over 10,000 tons of building debris and soil. The debris had once been the Saxton Steam Generating Station (SSGS) building and the soil was excavated from around the site. The SSGS was adjacent to and served by the SNEC reactor plant and had become cross-contaminated during operation. The SSGS was demolished in 1975 with out first being surveyed and the building rubble used as backfill. The soil was removed during remediation and demolition preparation work around the containment vessel. Both had come from MARSSIM "Class 1 Impacted Areas" and would need surveyed prior to reuse as backfill on the site.

With such vast quantities it was decided to use a production based, automated system to scan the material and supplement this with sampling. The SNEC Project worked closely with Shonka Research Associates (SRA) of Marietta Georgia to develop such a system.

The resulting system of conveyors and survey equipment is shown in the following photo. The material handling system consists of a screening plant, a flat belt horizontal conveyor and a radial stacking conveyor. The material is fed into the screening plant which conditions and sizes the material. The output is fed into the flat belt conveyor and spread out in a four (4) inch thick, thirty two (32) inch wide layer. The travel speed is controlled to four (4) inches per second (twenty (20) feet per minute). This layer passes under the SRA detector array and onto the radial stacking conveyor for delivery.

DOE NATIONAL ENERGY TECHNOLOGY LABORATORY

The National Energy Technology Laboratory (NETL) Provides Technical Assistance to DOE Sites.

With the closeout of the Deactivation and Decommissioning Focus Area in FY02, part of the effort of the National Energy Technology Laboratory (NETL) has been refocused to provide technical assistance in decontamination and decommissioning (D&D) to DOE sites.

The process starts with a site request for technical assistance. NETL works with the site to clarify the problem, define the scope of work to address the site's request, identify the approach, procure resources, and manage the execution of the approach. A technical assistance team, composed of members with the expertise and experience needed to support the request for assistance, meet to identify and prioritize technical solutions. Finally, the team develops a report with observations and final recommendations. Typically, the team is comprised of D&D technical experts within the DOE complex and private sector experts in the nuclear industry.

As part of the technical assistance efforts, NETL sponsored workshops for D&D technical assistance at Rocky Flats Closure Site, Mound Closure Site, and Oak Ridge Reservation.

DOE NETL (Continued)

A technical assistance team was assembled by NETL to address the demolition of Building 776/777 at the Rocky Flats Closure Site. The team provided an independent assessment of D&D options to limit fugitive emissions. Based on information provided by the Site, the team submitted a "segmenting and phased demolition approach" which entailed dividing the building into (1) potentially releasable areas with low radioactive contamination levels that could be decontaminated and released, and (2) areas of higher contamination levels with low probability of free release. The released part of the building would be demolished before the contaminated part. The team's observations allowed the site to consider other options to better minimize and manage the emissions caused during the D&D process. The Kaiser-Hill Building Manager praised the team's observations and later issued a letter of appreciation to the Department of Energy.

NETL assembled and led two technical teams at the Mound Closure Site: Mitigation of fugitive emissions from D&D and an Independent Review of the Main Hill Project Estimates of Tritium Inventories, Release Fractions, and overall D&D approach. Both teams developed an independent assessment of the site's baseline plan that included alternative approaches and their relative cost impacts. As a result, recommendations were made available to all bidders for the new remediation contract. This information was used to assist the contract winner and to help bring the schedule for closure back into 2006. The Multi-Agency Radiation Survey and Site Investigation Manual (MARRSIM) process has been recommended in the critical path to completion.

Recently, NETL completed a technical assistance study on the scrap metal characterization of the K770 and Y-12 storage areas located in Oak Ridge, Tennessee. The team was charged to identify the most promising technologies for characterization of scrap metal for disposal that would reduce the time and costs associated with this process. A secondary objective was to identify and prioritize strategies that provide improvements over the present characterization process. A preliminary report was generated and is currently being reviewed. A final report and presentation are available.

Through these endeavors, NETL continues to lead in the DOE effort to clean up former weapons production sites.

FFTF DEACTIVATION AND DECOMMISSIONING UPDATE

Facility Background - The Fast Flux Test Facility (FFTF), located in the 400 Area of the Hanford Site, is a 400-megawatt, liquid sodium-cooled reactor. The reactor was brought on-line in 1980 and was operated for over 10 years as a national research facility. The facility was shut down in December 1993 and remained on a standby mode since 1995. The reactor fuel was removed from its core in April 1995 and now resides in interim dry storage casks outside the reactor, or in sodium storage in vessels or pools in the reactor building. In addition to reactor fuel, the Plant's 260,000 gallons of sodium coolant were being maintained in the primary and secondary systems and two fuel storage tanks. There are some 78 auxiliary systems that are still operational to ensure safety of the Plant and management of the Plant's sodium and stored fuel. Additional information on the background of FFTF can be found on the web site at http://www.hanford.gov/fftf.

FFTF (Continued)

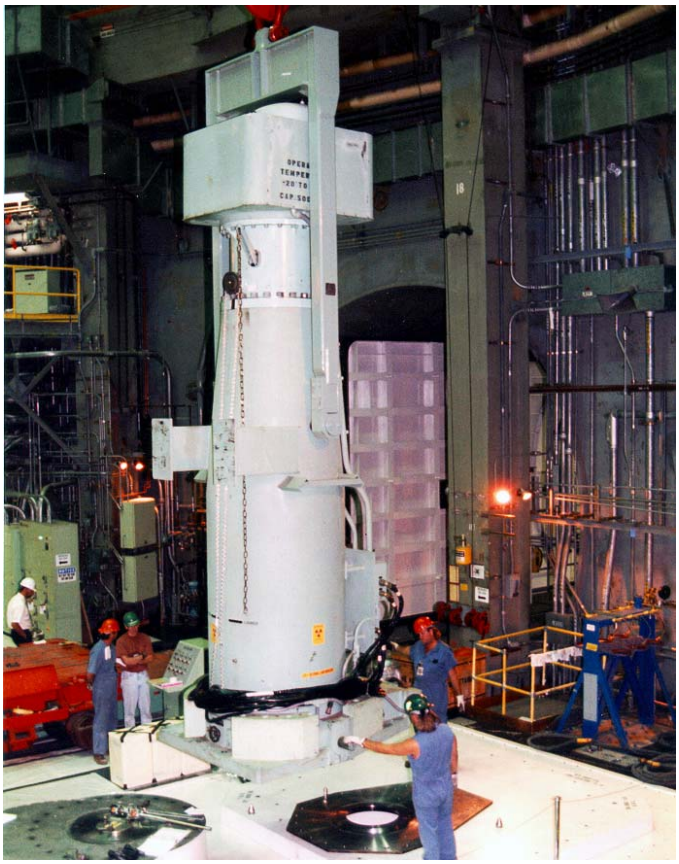
Project Scope - The project will be approached in two phases. The first phase (Deactivation) will consist of removal of the irradiated and unirradiated fuel components from the FFTF and packaging for approved storage. The liquid metal (mostly sodium) will be drained from the reactor systems, the two fuel storage vessels, and their auxiliary systems to tanks located in the Sodium Storage Facility. The residual sodium (approximately 3,600 gallons) will be removed from the plant systems by a combination of in-situ cleaning with moist vapor-nitrogen gas followed by water flushing and physical component removal for treatment and disposition. Support systems will be drained and de-energized, as appropriate, in both the FFTF and the support buildings in order to remove potential hazards. Equipment will be removed from the facility to the extent practical for asset recovery and to minimize hazards.

The scope of the second phase will cover the final facility disposition or decommissioning activity where the facility will be taken to its ultimate end state. At this point a final decision on the end state has not been made. Consequently, the exact scope of work during this phase remains to be defined. The facility end state will be determined by requirements of the appropriate Department of Energy's environmental policy and the applicable environmental laws and regulations that will evaluate credible options based on effectiveness in providing protection of human health, the environment, implementability, and cost.

Current Status - The first major activity designating the initiation of FFTF deactivation was begun on April 7, 2003 when the sodium from the first of the three-loop secondary system of FFTF was drained successfully. The entire secondary system sodium drain evolution was completed by April 16, 2003. Removal of spent fuel assemblies from the Fuel Storage Facility, Fuel wash and their transfer to an interim storage has begun.

Closed Loop Ex-Vessel Machine: A Principal Component Used For Removal Of Core Components

Interim Storage Cask (ISC) for Spent Fuel Assemblies



Solid Waste Cask for transferring Core Component Containers With Fuel from Cell to ISC