

# NEWSLETTER

DECONTAMINATION, DECOMMISSIONING, AND REUTILIZATION DIVISION  
OCTOBER 2001

## DIVISION OFFICERS

### CHAIRMAN

Mr. Samit Bhattacharyya (Argonne)  
Phone 630-252-3293  
Fax 630-252-4007  
email bhatt@anl.gov

### VICE CHAIR-CHAIR ELECT

Ms. Lynne Goodman (Detroit Edison)  
Phone 734-586-1205  
Fax 734-586-1776  
email goodmanl@detroitedison.com

### SECRETARY

Mr. Arthur E. Desrosiers (Bartlett)  
Phone 508-746-6464, Ext 300  
Fax 508-830-3616  
email arthur@bartlettinc.com

### TREASURER

Mr. Russell A. Mellor (CY)  
Phone 860-267-3690  
Fax 860-267-3535  
email ramellor@aol.com

### PAST CHAIR/CHAIR OF

#### NOMINATING COMMITTEE

Mr. Donald R. Eggett (A E S Corp.)  
Phone 630-357-8880 ext. 18  
Fax 630-357-4445  
email dreggett@aesengineering.com

## EXECUTIVE COMMITTEE

Ms. Patricia Augustyn (Graver Tech.)  
Phone 203-235-7838  
Fax 203-237-1855  
email paugustyn@gravertech.com

Mr. Joseph E. Carignan (TLG Svcs)  
Phone 423-875-4555  
Fax 423-875-4666  
email carignan@tlgservices.com

Mr. James Fiore (USDOE)  
Phone 202-586-6331  
Fax 202-586-6523  
email James.Fiore@em.doe.gov

Mr. Vincent F. Likar (Consultant)  
Phone 702-656-7120  
Fax 702-656-9539  
email Vincebldr@aol.com

Mr. William J. Manion (WJM Consulting)  
Phone 203-438-4266  
Fax 203-438-1638  
email wjmanion@aol.com

Mr. Richard L. Miller (Bechtel Power)  
Phone 301-639-7087(cell)  
Fax  
email Rmiller@bechtel.com

Dr. William Phythian CTECH  
Phone 905-829-0705  
Fax 905-829-8810  
Email wphythian@ctechrm.com

## CHAIRMAN'S MESSAGE

As is customary, I would like to begin by stating that I consider it a great honor and privilege to be the chairman of the DD&R Division for the 2001-2002 year. I have the good fortune to have a set of exceptionally talented colleagues elected as Division Officers, with whom I will share the task of guiding the Division through an admittedly changing D&D environment. We are also beneficiaries of a very experienced, diverse and dedicated group serving on the Division's Executive and Program Committees. With such an impressive group of professionals at the helm, the Division's goals should be met in grand style.

I would like to take this opportunity to thank Don Eggett, outgoing chair of the Division, for his tireless efforts on behalf of the Division, its programs and its members. Don has agreed to remain on the Executive Group of the Division, chairing the Nominating Committee and providing me with advice and counsel as needed.

Since there are a number of new members in the Division, it is appropriate to present a brief status of the Division. The DD&R Division is relatively new in ANS (formed in 1995 as the 18<sup>th</sup> ANS Division). It is currently fourth largest of the 19 ANS Divisions with a membership of 1250 (out of a total ANS membership of 10,014). Our membership has shown steady growth over the years and of the incoming new ANS members, 16% have joined DD&R. The Division budget has ranged from \$17-32K, derived from ANS membership allocation, topical meeting income and endowments. The expenditures have ranged between \$9-19K and have included student support, scholarships and newsletter expenses and, there is generally some carryover of funds into the following year. More information on the Division can be found on our website at [www.ddrd.ans.org](http://www.ddrd.ans.org). Clearly, we have done well to date and have significant membership support. However, there are a number of issues that we as a Division, and members involved with D&D activities have to face.

The D&D landscape, as you have all observed, is changing. What appeared to be boom times for the commercial D&D business only a few years ago, with all of the projected nuclear plant shutdowns, appears now to be a very limited market in the near term. This situation has been spurred by successful license extensions of the Calvert Cliffs and Oconee plants, and the recent energy shortage incidents in California which have led to the increased interest in producing energy from all power plants for as long as possible. All nuclear power plants that are in reasonable operating condition will undoubtedly go the life extension route.

In addition, the D&D activities within the Department of Energy are also proceeding at a much slower rate than anticipated. Despite the \$6B annual budget of DOE's EM program office, and the 2700 facilities currently on DOE's D&D list, the amount allocated to D&D keeps decreasing each year because of the pressures from other Environmental Restoration activities, many of which are compliance driven. There had been closure dates assigned to several sites (e.g. ANL(E) for 2003), but budgetary shifts have pushed these dates into the undefined future. Thus, business opportunities at DOE sites are limited in the near term and quite uncertain.

There are a large number of research and non power reactors around the world that have been shut down and are awaiting D&D. Unfortunately, availability of resources for D&D of these facilities is a major issue. It should be noted that a number of these reactor facilities are in countries with little nuclear infrastructure and technical assistance from experienced D&D organizations would be welcome, if resources could be made available.

Life extension of nuclear power plants is a reasonable goal, and since operating nuclear power plants are excellent sources of large amounts of electric power, we should all support this trend. I believe strongly that the best scenario for the DD&R Division and its members is for

**EXECUTIVE COMMITTEE**  
**(CONTINUED)**

Mr. Timothy J. Polich (NASA)  
Phone 419-621-3314  
Fax 419-621-3236  
email timothy.polich@grc.nasa.gov

Mr. James S. Rang (JSRang Services)  
Phone 231-946-5779  
email jsrang@chartermi.net

Ms. Amy Roddey (American T&F)  
Phone 843-744-5770  
Fax 843-744-7769  
email amy@atfco.com

Mr. Jay K. Thayer (Duke Engrg.)  
Phone 978-568-2212  
Fax 978-568-3749  
email jkthayer@dukeengineering.com

Dr. Paul L. Ziemer (Purdue)  
Phone 765-494-1435  
Fax 765-496-1377  
email ziemer@purdue.edu

**STANDING COMMITTEES**

**Program Committee Chair**

Mr. James S. Rang (JSRang Services)  
Phone 231-946-5779  
email jsrang@chartermi.net

**Membership Committee Chair**

Mr. Joseph E. Carignan (TLG Svcs)  
Phone 423-875-4555  
Fax 423-875-4666  
email carignan@tlgservices.com

**Finance Committee Chair**

Mr. Gerry Motl (Envirocare)  
Phone 513-604-3368  
Fax 419-791-3750  
email GerryMotl@fuse.net

**Honors and Awards Committee Chair**

Mr. Carl Mazzola Stone & Webster  
Phone 706-650-0939  
Fax 706-650-0887  
email carl.mazzola@stoneweb.com

**Goals and Planning Committee Chair**

Ms. Lynne Goodman (Detroit Edison)  
Phone 734-586-1205  
Fax 734-586-1776  
email goodman@detroitdison.com

**Publicity/Public Policy Committee Chair**

Ms. Patricia Augustyn (Graver Tech.)  
Phone 203-235-7838  
Fax 203-237-1855  
email paugustyn@gravertech.com

**Scholarship Committee Chair**

Dr. Paul L. Ziemer (Purdue)  
Phone 765-494-1435  
Fax 765-496-1377  
email ziemer@purdue.edu

**Standards Committee Chair**

Mr. Donald R. Eggett (A E S Corp.)  
Phone 630-357-8880 ext. 18  
Fax 630-357-4445  
email dreggett@aesengineering.com

**Newsletter Committee Chair**

Mr. Vincent F. Likar (Consultant)  
Phone 702-656-7120  
Fax 702-656-9539  
email Vincebldr@aol.com

**Web site** [www.ddrd.ans.org](http://www.ddrd.ans.org)

**(Chairman's Message – Continued)**

the D&D of nuclear reactor facilities to be an integral part of a thriving nuclear future in which there is continuing startup of new facilities that more than compensate in output power for the ones that are shut down at the end of their life. In an asymptotic condition, at any given point in time there would be plants in a construction mode, plants in an operating mode and plants in a shutdown and D&D mode. That is the best scenario for a healthy nuclear future, of which all of us should want to be a part. An important point in our planning to integrate closer with future nuclear development is to develop plans to incorporate lessons learned from our D&D experiences to date into the design of the next generation reactors. It is clear that D&D was not an important consideration for the first generation reactor designers. In view of the large costs of the D&D of a nuclear power plant and associated facilities, and the safety and contamination risks involved, there is a very large payoff in the long run to design reactors with eventual D&D in mind. Consideration also needs to be given to waste and dose minimization (by suitable process and materials choices). The DD&R Division with its membership expertise in these areas can play a major role in this venture. We are planning to make a start on this with a session on this subject at the Reno ANS meeting this November. I hope many of you will be able to attend and contribute.

One benefit of the deferment of larger D&D activities is that it provides time to address in detail a range of issues that need satisfactory resolution to ensure safe, cost-effective D&D. These issues, developed in discussions with members of the Division, are listed below.

1. Technical
  - D&D Technologies
  - Characterization and Survey Methods/Approvals
  - Site Release Criteria/Process
  - Remote Monitoring (S/M)
  - Specific Materials Issues (e.g., activated concrete)
  - Specific Site Issues
  - D&D Standards
  - Spent Fuel Disposition
2. Financial
  - D&D Cost Estimates/Validation
  - Major Cost Drivers
  - Tax Issues with D&D Fund
  - DOC-Financial Considerations
3. Political/Regulatory
  - EPA Participation in Regulatory Issues
  - New Rulemaking
  - GTCC Ruling Impacts
4. Strategic
  - Impacts of License Renewals
  - License Termination
  - Public Education, Information, Participation
  - Psychological Issues with D&D (vs. operations)

Our plan is to address these issues in the D&D sessions at ANS meetings and in topical meetings. I would like to see us generate technical position papers on the key issues based upon the presentations and discussions at these meetings.

One of the more significant things the Division can do for its membership and the industry at large is the development of D&D standards for various activities. Under the leadership of Neil Norman, a good start has been made in the preparation of three standards. However, considerably greater amount of effort is needed to complete these, and start on new standards. We should take as a goal the development and dissemination of a few new standards each year. Since Neil is planning to retire, Don Eggett has agreed to take on the chairmanship of the Division's Standards Committee. Don and I will be calling on many of you to seek volunteers for the standards preparation effort.

## **(Chairman's Message – Continued)**

Another issue that needs mention is that of Topical meetings. As you are all aware, the Topical meeting scheduled for September 2001 had to be cancelled, primarily because of a lack of volunteer manpower. This had several impacts, not the least of which was a great reduction in the Division's income. As we have discussed in the past, there are probably too many conferences that dilute the technical impact of the papers and reduce attendance at any individual conference. We are attempting to co-sponsor joint Topical meetings with other Divisions (primarily the Fuel Cycle and Waste Management Division) in order to increase draw and also to consolidate meetings. A task force led by Patty Augustyn has had several meetings on this and will provide a recommendation on an approach soon. Meanwhile, preparations are being made for a Topical meeting in San Diego in 2003.

I have raised a number of issues and questions about the current situation with the changing D&D landscape and decreased opportunities in the conventional markets. We need to look ahead to what we need to do to sustain our vitality. For starters, we will have to place greater emphasis on re-utilization than we have to date. We will need to promote closer links between commercial/ government/international D&D activities in order to share information on opportunities, successes and lessons learned. We will need to co-sponsor significant topical meetings with other ANS Divisions in order to optimize resources and maximize attendance and participation. Finally, we will need to integrate our activities more closely with the overall nuclear power systems lifecycle development framework than we have in the past.

These are significant challenges, but I know we are up to meeting them. I look forward to working with you on these this year.

*Sam Bhattacharyya*

## **PROGRAM COMMITTEE**

### **2001 ANS Winter Meeting in Reno, Nevada November 11 to 15, 2001 at the Reno Hilton Hotel**

This year's Winter Meeting has as its theme "Nuclear Research and Development" which DD&R supports in its five paper and panel sessions. The sessions are included in **Track 6 – Legacy Management: Decommissioning, Spent Fuel and Waste**. For additional information on the meeting, check out the preliminary program on the ANS web site at [www.ans.org](http://www.ans.org). The sessions include:

Monday, November 12, 10:00 – 11:30 AM "Incorporation of Lessons Learned for D&D of Commercial Reactors to Next Generation Nuclear Reactor Systems" Panel Session Co-Chairs Sam Bhattacharyya and Bill Manion.

Monday, November 12, 1:00 – 4:00 PM "D&D Science and Technology: Decontamination and Dismantlement", Paper and Panel Co-Chairs Steve Bossart and Joe Carignan

Tuesday, November 13, 1:00 – 4:00 PM "D&D Science and Technology: Robotics and Characterization", Paper and Panel Co-Chairs Steve Bossart and Joe Carignan

Wednesday, November 14, 1:00 – 4:00 PM "Hot Topics and Emerging Issues", Co-Chairs Tom LaGuardia and Patty Augustyn

Thursday, November 15, 8:30 – 11:30 AM "Industry Update on Materials and Site Clearance Standards", Co-Chairs Jas Devgun, Jim Fiore and Carl Mazzola

### **2002 ANS Annual Meeting in Hollywood, Florida, June 9 to 13, 2002 at the Diplomat Hotel**

The next annual ANS Meeting theme is "The Revival of the Nuclear Energy Option" which DD&R supports with five paper and panel sessions in **Track 5: Life Extension and Decommissioning**.

### **Spectrum 2002 - 9<sup>th</sup> Biennial Conference in Reno, Nevada, August 4 to 8, 2002 at the Reno Hilton**

Spectrum 2002 is an international conference with a primary focus on resolving technical issues, deploying improved technologies and strengthening the science-based decisions for nuclear and hazardous waste management applications. The technical program will focus on opportunities for deployment and evaluation of new technologies; science and technology application to environmental decisions; and accelerating the deployment of advanced technology to emerging environmental problems. The objective is to provide new opportunities for commercialization of products and services for nuclear waste management including decommissioning and decontamination, and environment restoration.

## **EXECUTIVE CONFERENCE AT FOXWOOD'S**

The 2001 DD&R Executive Conference, July 8-11 was a total success under the leadership of General Chair Russell A. Mellor. There were just under 200 executives from around the globe that enjoyed an incredibly well received technical program. Highlights of the technical program, "Engaging and Exchanging for Safety: How to Share in a Competitive Environment," were sessions on "End State Planning and Long Term Stewardship," and "The Convergence of Tactics and Talent; Government and Utility Projects." The conference was also a financial success with solid attendance and excellent support from sponsors.

## HOT TOPICS AND EMERGING ISSUES IN DECOMMISSIONING

The following topics will be discussed in the **HOT TOPICS AND EMERGING ISSUES** session at the Reno, NV conference on Wednesday, November 14, 2001 from 1 to 4 PM.

- 1) **Effect of Deregulation and Electric Industry Changes on Decommissioning Funding:** Whether State Public Service Commissions will allow continued decommissioning funds at a sufficient level. Revisions in tax regulation and pending legislation do not address all deregulation issues.
- 2) **Conditions of License Termination and Standardization:** Present uncertainty of point of license transfer from Part 50 to Part 72 negatively impacts effective D&D project planning and execution. This may be exacerbated by State interaction.
- 3) **Entombment Decommissioning Option:** The US NRC has reevaluated the entombment option for decommissioning nuclear power plants. Entombment can have long-term and short-term impacts on decommissioning planning, funding, and liabilities.
- 4) **Groundwater Monitoring and Characterization:** The US NRC may require additional groundwater monitoring to enable adequate site characterization and dose assessments.
- 5) **Embedded Piping:** License Termination Plans and Decommissioning Plans should include a discussion describing the methodology the licensee plans to use when conducting surveys of embedded piping planned to be left behind.

## CONSOLIDATION OF DD&R MEETINGS

About a year ago, the late Dr. Paul Hart reported to the DD&R Executive Committee that dozens of meetings were held annually on the decommissioning of commercial nuclear and DOE facilities. He found listings for 83 conferences in 2001, half of which were held in the USA. A person of unlimited interest, time and money could attend approximately 1.5 DD&R related conference per WEEK. Although anyone reading this article might have an abundant interest in DD&R, it is a safe bet that the same person is restricted by schedules and funding conflicts.

An Ad Hoc committee was formed at the Washington, DC conference to look more closely at this situation and make recommendations to the DD&R Executive Committee. The committee has met several times and had reached out to the Fuel Cycles Waste Management Division (FCWM) for cooperation.

The committee has recommended that we attempt to consolidate several DD&R related conferences into one conference. The hope is to produce a "two pillar system" with a super-conference in the early fall to balance the Tucson conference held each March. The committee will be contacting many organizations including ANS professional divisions, the US DOE, NEI, EPRI and vendors who sponsor DD&R related conferences to solicit interest. The perceived benefits to this approach include a reduction in the number of conferences an involved DD&R member feels the need to attend (saving time and money), higher quality and no-repeat paper presentations and ultimately an increased participation by commercial, DOE and vendor personnel.

Comments, questions and volunteer offers can be addressed to [paugustyn@gravertech.com](mailto:paugustyn@gravertech.com).

## AWARDS AND HONORS

Bill Trubilowicz was selected as having the best presentation at the June ANS National Meeting DD&R sessions. Bill's presentation on "Big Rock Point Restoration Project Decommissioning Successes from a Safety Culture Perspective" was entertaining as well as informative. The session on "Safety Yields Decommissioning Successes" was on Thursday morning, showing sometimes some of the best presentations are last. There were a number of highly rated presentations during the DD&R sessions at the June meeting.

## DECOMMISSIONING HANDBOOK

The DOE Decommissioning Handbook (to be published by ASME) is coming along (albeit slowly). Many draft chapters have been received, but about half-a-dozen are still outstanding. We have had good support from the commercial reactor decommissioning projects with respect to summaries of history of the plants, activities performed, current status, and lessons learned. The editors, Anibal Taboas, Alan Moghissi, and Tom LaGuardia expect to start the task of overall editing in October 2001, with an eye for completion of the manuscript by March 2002. We appreciate all the support the authors and support staff from the industry have provided. We would like the ANS DD&R Division to assist in the peer review process when we are ready with a complete manuscript.

## DECOMMISSIONING STANDARDS DEVELOPMENT

The action on the three DD&R 3.12 series standards was delayed this year by the press of the CA energy crisis. Two of our Drafting Committee Chairs are located at the SONGS plants in Southern California and planned and unplanned outages had them very busy. Dave Pilmer chairs the drafting committee for 3.12.1, the Defueled Security Plan and Steve Shepherd chairs 3.12.2, the Defueled Safety Analysis Report and Emergency Plan. Things are more normal now in California and Dave and Steve are planning to have draft material ready for their drafting committees to review at the time of our November meeting. Don Eggett who chairs the drafting committee for 3.12.3, Operator Training will also have draft material available at that time.

There will be **meetings** of the DD&R Standards Committee volunteers on **Tuesday, 11/13/01** from 7 to 8am and on **Thursday, 11/15/01 from 8 to 10am**. Please refer to the final meeting program for the room locations for those meetings. All members of the DD&R volunteer committees and any others interested should attend one or both of those meetings. We look forward to seeing you there. Our Division Chair Sam Bhattacharyya is making the DD&R Standards a high priority for the Division. More volunteers are needed and you are encouraged to attend the DD&R Standards Committee meetings in Reno and learn if there is any place you could contribute.

At our June meeting of the Nuclear Fuel Cycle Standards Committee our SC-3 subcommittee Decommissioning and Site Remediation Standards was re-identified as ANS-23. The ANS-23 Committee will cover nuclear facility standards for defueled conditions. These may include standards covering: safety, training, security, emergency planning, remote monitoring, data validation, or other topics requiring special consideration in the defueled condition. There are presently six standards assigned to the committee, but the full NFSC is looking to the DD&R Division to propose additional subject standards as the need is discovered.

Neil Norman has been chairing this Subcommittee through its creation and initial activities, but will be backing away from that level of ANS participation this year. Don Eggett has agreed to take over the Chair of ANS-23 at the November meeting. Neil Norman has agreed to assist Don after that time at a reduced level of activity. Both will be participating in that meeting and will be looking for your help to move forward with the DD&R Standards as our Chairman "Dr. Sam" wants us to and as we need to do to achieve standardization in the D&D processes.

## RUSSIAN CHARACTERIZATION TECHNOLOGY DEMONSTRATION

Two innovative characterization technologies, that matured in the aftermath of the Chernobyl nuclear incident in the former Soviet Union, were demonstrated from July 10 to August 2, 2001, at the Idaho National Engineering and Environmental Laboratory (INEEL). These technologies facilitate decommissioning by providing 'real time' characterization information, untethered, in potentially highly contaminated areas.

The principal technology—the Gamma Locator Device—was originally designed by NIKIMT, Russia's Research and Development Institute of Construction Technology, and was used during cleanup of the Chernobyl site. The distinguishing feature of this device is that it remotely (untethered) transmits live video and radiation measurements by radio frequency to operators at control stations a safe distance away. Radioactivity levels appear on a computer monitor in color-coded maps that allow technicians to pinpoint highly contaminated areas. The second technology – the Isotopic Identification Device (IID) -- quickly identifies specific isotopes within a given field of view. The IID was programmed to identify cesium-137, cobalt-60 and americium-241 and can be modified to identify other isotopes. Combined, these technologies remotely identified radioactive isotopes and measured their radiation fields, reduced worker exposure, minimized the need for physical samples and shortened project schedules by providing 'real-time' information, instead of waiting up to four weeks for laboratory results. These Russian-made instruments were mounted on an INEEL robot that transported them into contaminated rooms at a facility in Test Area North and the Power Burst Facility.

"This new technology involves less than half the number of workers, reduces worker exposure to almost zero, and takes only one-fifth the time to complete a survey. It's good news for everybody," said Neal Yancey, INEEL's principal test engineer for the demonstration. The combined technologies also successfully identified 'hot spots' that were not detected by previous baseline manual survey techniques.

Pictures are available on the INEEL Large Scale Demonstration and Deployment Project web site (<http://id.inel.gov/lstdp/>).

DOE's Environmental Management International Program sponsored the Russian technology demonstration through a Large Scale Demonstration and Deployment Project funded and managed by the National Energy Technology Laboratory.

For additional information on cleanup technologies, refer to the INEEL's Technology Catalog at [www.tech.inel.gov](http://www.tech.inel.gov).

## DOE STATUS SUMMARY

### DOE'S FACILITY DEACTIVATING AND DECOMMISSIONING PROGRAM

The Department of Energy (DOE) Office of Environmental Management (EM) is responsible for the deactivation and decommissioning of excess facilities from former weapons production and research activities of the Atomic Energy Commission and DOE. Through FY 2000, EM has completed decommissioning of over 570 excess facilities. However, more than 10,000 DOE facilities are now considered excess as the result of changing DOE missions and facility obsolescence. Over 3,000 of these facilities have already been transferred to EM, and thousands more will be transferred into EM over the next decade.



The DOE operating programs are responsible for the shutdown, stabilization and transition of excess facilities to EM. EM is responsible for facility disposition, which includes deactivation and decommissioning. During deactivation, the EM program places facilities in a stable and known condition that is economical to monitor and maintain until the eventual decommissioning. The final facility disposition activity is decommissioning, when a facility's end state is achieved through decontamination or demolition. In some cases decontaminated facilities are being reused by the private sector following cleanup. Surveillance and maintenance (S&M) activities are conducted throughout the facility life cycle, including during the cleanup.

EM's inventory of excess facilities includes some of the largest, most complex facilities in the world. They are often contaminated with radioactive and hazardous substances and were built with materials such as asbestos and polychlorinated biphenyls. In addition to being highly contaminated, many facilities are abandoned, deteriorating, and missing "as built" data. Some facilities are relatively unique, such as gaseous diffusion plants and plutonium processing canyons. Disposition is further complicated by remote locations, multiple stakeholders, budget restrictions, and competing priorities within the overall EM program.

EM is making significant facility disposition progress throughout the nuclear weapons complex. We will complete cleanup at Weldon Spring, Missouri this year. We also are aggressively working at our closure sites where ongoing cleanup scope is expected to be complete by 2006. The most prominent closure sites are Fernald, Ohio and Rocky Flats, Colorado, but we have cleanups underway at numerous smaller sites throughout the country. Finally, we have active cleanups underway at our major facilities that will extend beyond 2006, these major sites include Savannah River, South Carolina; Richland, Washington; Idaho National Environmental and Engineering Laboratory; and Oak Ridge, Tennessee. The US map above indicates DOE active work ongoing in the States that are darkened.

We have been working to improve our contracting and management approaches and increase our toolbox of decommissioning techniques. We're pleased to be able to provide DOE information to this newsletter. We plan to discuss specific cleanup projects and contracts in future issues of the DD&R newsletter.



Fernald, OH



Rocky Flats, CO

## CONNECTICUT YANKEE DECOMMISSIONING UPDATE

**Decommissioning Progress** - In May, Bechtel Vice President Edward (Ed) C. Shyloski Jr. became the new Project Manager for the Connecticut Yankee Decommissioning Project. The major work activity in Containment is the continued clean up and demobilization of equipment used to segment the Reactor Internals. The 64 FAS Canisters containing the cut-up pieces of the Reactor Internals located in the Reactor Cavity were moved into the Spent Fuel Pool for storage. A second dive evolution was conducted in mid-August to remove the old sluice gate in the transfer canal, on the spent fuel side. Then the old flanged spool piece and gasket were removed and a new 20-bolt seal plate was installed and pressure tested. This evolution completed the isolation of the Spent Fuel Pool from the Reactor Cavity. Work will now focus on the removal of the Reactor Pressure Vessel later next year. All 45 Control Rod Drive Mechanisms were removed, loaded and shipped off site in June. DEMCO has mobilized on site and is in the process of preparing various storage tanks for demolition. In addition, Demco is removing major components (heat exchangers) from the Turbine Building and will essentially gut the building of piping and cables. To facilitate the process, the Turbine Building is now part of the Radiologically Controlled Area.

**CY Tour Day** - Over 100 utility executives attending the American Nuclear Society Executive Conference on Nuclear Facility Decommissioning & Used Fuel Management at Foxwoods toured Connecticut Yankee on July 9, 2001. The participants toured the site; visited vendor and decommissioning project exhibitors and attended a welcoming dinner at St. Clements Castle in Portland, CT. Connecticut's US Representative, Rob Simmons, addressed the gathering and spoke on high-level waste issues affecting CT and the nation. At Foxwoods, Greta Dicus, Commissioner, U.S. Nuclear Regulatory Commission opened the Plenary Sessions. Presenters and session chairs representing CY included Russ Mellor, Michael Cavanaugh, Gerry van Noordennen and Richard Sexton. CY staff assisted at the technical sessions at Foxwoods. A CD disk containing all the presentations made at the ANS Executive Conference at Foxwoods, pictures of CY Tour Day and a video tour of CY was sent to all the conference attendees.

**Large Component Removal** - In early May, the final two Steam Generator (SG) Lower Assemblies left the plant by barge and traveled down the Connecticut River to the Intracoastal Waterway arriving in South Carolina on May 11, 2001. The SGs were transferred onto rail cars and shipped by rail for disposal at the Barnwell Nuclear Disposal Facility on Thursday, May 17, 2001. The burial of the last two steam generators lower assemblies was completed at Barnwell on Saturday, May 19<sup>th</sup>.

In mid-July, CY's pressurizer was transported off site to a rail spur in Portland, CT. There it was loaded onto a rail car for shipment to the EnviroCare disposal facility in Utah on Friday, July 20, 2001. The rail car carrying CY's pressurizer arrived at Envirocare in Clive, Utah on the afternoon of August 3, 2001 and was accepted by the facility for disposal.

In August, miscellaneous vessels (heat exchangers, evaporators, condensers, tanks and reboilers) were removed from the Primary Auxiliary Building (PAB).

**License Termination Plan** - The NRC Atomic Safety and Licensing Board (ASLB) completed the pre-hearing conference in early May. The Connecticut Department of Public Utilities Commission and Citizens Awareness Network had filed contentions and were granted intervener status. An Informal Discovery session was conducted on August 27, 2001 at the plant. In other issues related to the LTP, the Historical Site Assessment (HSA) supplement has been completed and sent to the NRC on August 22, 2001. Plant staff continues to work with NRC staff on resolution of RAI responses to facilitate the LTP review effort. The second round Response to the Request for Additional Information Regarding the Haddam Neck Plant License Termination Plan was sent to the NRC on August 22, 2001.

**Independent Spent Fuel Storage Facility (ISFSI)** - Work on building the ISFSI is on hold. The Town of Haddam has rejected CY's building application to build the facility and has rejected CY's compensation offer. CY has filed suit, seeking resolution of the issue in court. NAC has delivered all 43 fuel storage cask liners and associated parts to the site. The liners make up the inner wall of the concrete cylinders that will cover the fuel canisters. The concrete cylinders will be manufactured on site at a later date.



Liners to the Vertical Concrete Casks



Pressurizer On Truck to the Rail Spur

## YANKEE ROWE DECOMMISSIONING UPDATE

Yankee Rowe plant activities are focused on planning and preparing for the transfer of used fuel from wet to dry storage.

### **Yankee Rowe ISFSI Status**

The construction of Yankee's 16 fuel storage casks was completed in June 2001. The casks were constructed on the fuel storage pad over a two-month period. The ISFSI access road and storage pad, including restoration of wetlands and landscaping is also complete.

Yankee's Fuel Transfer Operations Contractor (FTOC), NAC International, will transfer Yankee's 533 spent fuel assemblies and segmented reactor internals from the pool to dry storage. The FTOC has completed their mobilization activities and have operation and maintenance responsibility for the Spent Fuel Pool Island. NAC is developing the fuel transfer operations training program and finalizing the fuel transfer procedures and the design, procurement and installation of auxiliary equipment.

Yankee's GTCC waste sorting and packaging program was completed in July 2001. Six canisters were sorted and repackaged removing all organic material (e.g. filter media, hoses) for shipment as low-level waste to the Barnwell disposal facility. NAC is completing plans for fuel reconstitution activities this fall. Fuel pins and fuel pieces from previously damaged fuel assemblies will be placed into a reconfigured fuel assembly in preparation for fuel transfer.

The fuel transfer project is scheduled to begin in late 2001 and be completed in 2002. Yankee will complete the remainder of decommissioning, including license termination plan activities, building dismantlement and site restoration, after the fuel has been transferred to dry storage.



Yankee Rowe completed ISFSI facility. Yankee's 533 fuel assemblies will be stored in 15 storage casks. The remaining cask will store GTCC waste. Fuel transfer is scheduled to begin in late 2001

## BIG ROCK POINT DECOMMISSIONING UPDATE

A dry fuel storage (DFS) public open house was among the highlights at the Big Rock Point Restoration Project in the past quarter.

The open house was held Aug. 29, the fourth anniversary of restoration activities at the plant. Approximately 275 members of the public joined employees in touring informational stations about dry fuel storage around the country and world, a remote welding station, actually walked on the DFS pad, and had the opportunity to have their picture taken with one of the giant concrete and steel overpacks.

Employees and visitors also reflected on the progress made during the past year during a ceremony where a new restoration milestone marker was unveiled.

Other significant achievements in the past quarter include:

- Secretary of Energy Spencer Abraham visited Big Rock Point in August to learn more about decommissioning and dry fuel storage. The importance of DOE opening a storage site for spent nuclear fuel was emphasized to Mr. Abraham during his visit.
- Sixteen blocks of concrete were removed from the wall adjacent to the reactor vessel to create enough room for future removal of the reactor. The blocks weighted up to 16,500 pounds.
- Big Rock Point's 75- by-99 foot DFS pad was completely poured on June 30. Approximately 100 plant and contracted employees worked to mix, transport, pour and finish the 725 cubic yards of concrete needed to construct the pad. Loading the eight casks is scheduled to begin in 2002.
- Plant employees are currently working to install a 105-ton single failure proof crane to support the future loading of fuel into dry casks.
- An on-site museum honoring Big Rock Point and its employees was opened during the dry fuel storage open house Aug. 29. The museum includes historical photographs projected onto a screen, plant mementos, equipment nameplates, a section of the control room simulator, employee artifacts on loan to the museum, and a Wall of Fame honoring employees who have achieved significant personal or professional success.
- The alternate shutdown building was the first structure to be demolished at Big Rock Point. The 25- by-25 foot building was confirmed radiologically clean before it was leveled in late April. The remaining concrete and steel debris will be disposed of at an industrial landfill after undergoing several more checks to verify it is radiologically clean.



Secretary of Energy Spencer Abraham (center) visited Big Rock Point. Kurt Haas(left) and Bob Fenech briefed him



Concrete Section lowered into Shipping Container

## **SAXTON DECOMMISSIONING UPDATE**

Saxton has issued a contract to TLG Services Inc. for completion of concrete removal inside the Saxton Containment vessel. As the Containment Vessel extends 50 feet below grade it presents a daunting challenge to remove the concrete while maintaining the integrity of the Containment Vessel and preventing vessel "flotation". Remediation of areas adjacent to the Containment Vessel is nearing completion. Excavation of the Saxton Steam Generating Station (SSGS), a previously demolished fossil station that was used by the Saxton Nuclear Station to generate electricity, is complete and remediation is in progress. Project completion is scheduled for late 2002.

## **TROJAN DECOMMISSIONING UPDATE**

### **Trojan Final Survey Activities Started and ISFSI Project Continues**

The Trojan Nuclear Plant has started final radiation survey activities in accordance with its License Termination Plan (LTP), which was approved by the NRC on February 12, 2001. The final survey of the interior of the Containment Building marks the beginning of a long process that will ultimately result in termination of the Trojan 10 CFR 50 license and release of the site for unrestricted use. Final survey activities started on April 26, 2001, with the Containment dome. The NRC then independently checked this portion of the final survey while access to the dome was still available. The final survey of the remainder of the Containment Building, which includes the vertical liner plate, floor liner plate, and reactor cavity, is expected to be completed by the end of 2001. Final surveys of other areas will begin upon completion of the Containment Building.

The largest remaining project and the critical path to terminating Trojan's 10 CFR 50 License is the completion of the Independent Spent Fuel Storage Installation (ISFSI) Project, which includes the transfer of the spent fuel to the site-specific licensed ISFSI.

As previously reported in the Spring 2001 Newsletter, a contract to complete the ISFSI project was awarded to Holtec International. A total of 34 Holtec MPCs will be loaded and stored in the existing TranStor concrete casks. Fuel loading is scheduled to begin in the fourth quarter of 2002.

The remaining major tasks associated with the ISFSI Project include oversight of the design, licensing, procurement and construction of spent fuel canisters, canister handling equipment, and loading of the canisters. Engineering support for field changes and enhancements from lessons learned are being provided as required. The ISFSI Pad, Transfer Station, Storage Casks, and related security components are in place and are being appropriately maintained.

Currently, the 10 CFR 72 Safety Analysis Report is being revised and the license amendment request is being prepared for submittal to the NRC (scheduled for October 2001) to reflect the different design and components. The vendor must submit a Part 71 license amendment to the NRC to reflect the eventual transportation of the Trojan spent fuel components.

## **FERMI 1 DECOMMISSIONING UPDATE**

A major milestone was met this summer when reaction of the secondary sodium was safely completed. Approximately 1000 gallons of sodium residues have been safely converted during the secondary sodium cleanup. Most have now been converted to slightly tritiated salt water and the rest will be neutralized in the near future. Also, the main asbestos abatement project has been completed. More than a million pounds of asbestos have been removed. The remainder is inaccessible and will be removed after equipment is removed allowing access.

Other recent accomplishments include removal of the demin system, the cleanup of the lube oil system and abandoned portions of the service water system and removal of equipment from the waste gas valve room and sodium valve gallery. Removal of contaminated ductwork has started, making new accesses to work areas and elemental lead abatement. Also, the turbine and auxiliary systems have been sold. They will be extracted next year.

## **ROCKY FLATS UPDATE**

Safe progress means safe closure at the Rocky Flats Environmental Technology Site, and significant safe progress in waste shipping, processing, system removal and pollution prevention has been achieved this year.

The 200<sup>th</sup> shipment of transuranic (TRU) waste from the Rocky Flats Environmental Technology Site arrived safely at the Waste Isolation Pilot Plant (WIPP) August 28, 2001.

"Closing Rocky Flats means decontaminating and demolishing plutonium-contaminated buildings, packaging the hundreds of tons of wastes from these buildings, and shipping them to facilities specifically designed for safe long-term storage or disposal," said Department

### **Rocky Flats Update (Continued)**

of Energy Rocky Flats Field Office Manager Barbara Mazurowski. “Less than six months ago we celebrated our 100<sup>th</sup> shipment. Now we are celebrating our 200<sup>th</sup> shipment. This is a positive affirmation of Rocky Flats’ ability to get the job done safely by 2006.”

Rocky Flats continues to lead the nation in the number of shipments and volume of waste sent to WIPP for disposal, which today makes up 55 percent of WIPP’s current total inventory. Construction of two new TRUPACT-II loading bays will be complete in September, and these additions are expected to boost the site’s ability to load and ship TRU waste to 15 to 18 shipments per week. To date Rocky Flats has shipped 1,179 cubic meters of TRU waste to WIPP, 30,164 cubic meters of low-level waste to the Nevada Test Site and 17,096 cubic meters of low-level mixed waste to Envirocare of Utah and the Oak Ridge National Laboratory.

Workers in Building 371, a former chemical recovery facility at Rocky Flats, completed processing and packaging more than 7,000 pounds of a residue waste type known as sand, slag, and crucibles (SS&C). This waste consists of pieces of old heating pots (crucibles), magnesium oxide sand, and calcium fluoride slag – all of which was contaminated with plutonium. Historically, SS&C waste was generated from the reduction of plutonium fluoride to plutonium metal as part of Rocky Flats’ overall chemical recovery operations.

Building 371 is the last functioning nuclear operations building at Rocky Flats and is the location where all current residue waste processing and packaging operations are taking place. So far more than 87 percent of all the residues on site have been processed and packaged. The Building 371 Project also made Rocky Flats the first site in the DOE Complex to have a fully functional automated plutonium processing and packaging system in operation. The Plutonium Stabilization and Packaging System (PuSPS) packaged its first 3013 can in June. The 3013 cans are robust, 50-year containers for storing plutonium metals and oxides pending their final disposition.

Workers in Building 771 completed draining and removing all mixed residue liquid waste and piping systems in August, four months ahead of schedule. Draining and removal of all of the radioactive liquid systems included removing more than 2,000 liters of radioactive liquids and 31,000 feet of piping. Liquids drained from these systems included radioactively contaminated nitric acid, potassium hydroxide and hydrofluoric acid. Removal of these actinide liquids creates a safer environment for site employees and the surrounding community.

Leaded glass from unused glovebox windows at Rocky Flats is the stuff that awards are made of – literally. As the result of an innovative pollution prevention idea, thousands of pounds of leaded glass from Rocky Flats are being melted and molded by artists to create 12-inch high glass pyramid awards at the Lawrence Berkley National Laboratory in California.

High quality leaded glass is hard to find and artists enjoy working with it because of the unique properties it offers. However, because the glass contained lead it would have had to be disposed of as hazardous waste, posing a unique waste disposal problem for Rocky Flats. This solution saved taxpayers thousands of dollars in disposal costs and turned one site’s trash into an artist’s treasure. It also earned Rocky Flats’ Building 371 Project a runner-up award at the U.S. Department of Energy’s Pollution Prevention awards banquet in Albuquerque, NM.

Rocky Flats also received a top Pollution Prevention award for a unique sample drilling method that reduced waste generation by more than 200 cubic yards. Rocky Flats environmental cleanup managers determined that by changing the type of drilling equipment used from the traditional rotary mud drilling method to a hydraulic hammer, they could eliminate excess soil waste from the drilling process. In addition, the hydraulic hammer method does not require mud for drilling so it also results in significant water conservation.

Rocky Flats is the only place in the nation that has used the hydraulic hammer method of horizontal drilling for sampling potential contamination under building foundations. Combined, these two waste minimization efforts saved taxpayers more than \$300,000.



Truck Leaving Rocky Flats with Waste Shipment to WIPP

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