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# Recycling and Surplus Chemical Programs

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## RECYCLING AND SURPLUS CHEMICAL PROGRAMS

### 1.0 BACKGROUND

In 1988, 45 years of defense production came to a close at the U.S. Department of Energy (DOE) Hanford Site. The mission of the Hanford Site was formally changed to environmental restoration and remediation. Westinghouse Hanford Company (WHC) is the management and operations (M&O) contractor leading the cleanup.

Within the framework of future Site cleanup, Hanford recycling and surplus chemical programs are making a viable contribution today to waste minimization, diversion of materials from the waste stream, and setting a standard for future operations. This paper focuses on two successful efforts: paper recycling and surplus chemical sales.

### 2.0 PAPER RECYCLE PROGRAM

Recycling office paper at the Hanford Site was initiated in 1978. The program was administered as a part of the surplus sales activity. The paper was collected by plant personnel and held on pallets at the surplus material facility until a full truck-load could be shipped. The vendor bid the recycle paper contract on a fixed price per pound for 1 year at a time.

In the fall of 1990, a task team was formed to identify and remove the roadblocks that were stopping the program from expanding. The team felt that with the changing mission at Hanford, they could develop new solutions to several issues that had stopped recycling in the past. The two issues of concern were radiation monitoring and operation security. With paper recycling, there is a possibility that contaminated material might be transported offsite. Through the efforts of the task team and the Health Physics management team, the concern was eventually resolved by an agreement to review each building on the Site and provide, in writing, the facilities that could participate in the paper recycle program. The original concern about potential contamination was further reduced by a periodic monitoring of selected paper recycle bags and reviewing the monthly/bimonthly radiation survey records of participating facilities.

The operational security issues were two-fold. The first was determining which facilities could participate due to their use of nonpublic access information, and the second concern regarded what types of information could be put into the recycle bags. These issues were resolved by conducting a review of participating facility activities, training personnel to recognize nonrecyclable items, and providing a clear definition of what operational security criteria a piece of paper needs to meet if it is to be recycled. The final decision regarding the authorization to recycle printed material still

rests with the user. The end users are now more knowledgeable of the operational security constraints and the business sensitivity of internal company documents.

With these issues resolved, the scope of the activities and magnitude of the job dictated that a full-time person would be required to implement the expanded program. Additionally, the expanded program required innovative contract language to commit the recycle vendors to the level of involvement a successful recycle program commands. To encourage prospective vendors' involvement, the contract was written to provide a sliding scale purchase price as a percentage of a readily available, recognized recycle paper authority. The *Official Board Market*, nationally published, was selected as the monthly known standard for the recycle paper bid prices. The recycling vendor bids for the right to all our paper scrap, including estimated quantities of phone directories and cardboard as well as office scrap paper. This sliding scale allows the vendor to bid realistically for the potential value of the paper rather than bidding low to avoid getting locked into high cost paper in a declining market.

Following the contract award, the vendor's designated personnel are issued a security badge after a pre-employment security check. The badge allows the vendors' personnel to enter nonsecured areas of the Site without an escort. The vendor's truck is weighed both before and after each paper pickup, by the central stores warehouse storekeepers on certified government scales. The tare weight is used for both billing purposes and to track the quantity of paper being recycled.

The recycle vendor is required to furnish all collection bags, stands, vehicles, and personnel to service each collection point biweekly. There are currently almost 900 bags in service at Hanford, requiring two vendor employees to work 2 to 3 days each week to pick them up. The average collection volume per month is 39.5 tons year to date (1993). The recycle vendor's commitment to service has been the key to their success. Vendor employees make special trips to collect filled bags and assist the recycle program by discussing and resolving problems with the recycle staff.

The paper program at Hanford has grown from 13 tons of paper collected from 17 participating buildings in 1990, to 150 tons collected from 291 participating buildings in 1991, to the current level of 400 tons collected from 313 participating buildings in 1992. The growth has continued into 1993 with 98% of eligible buildings now participating in the paper recycle program.

For the program to experience continued successes, many promotional activities are used. Articles describing program achievements, accolades received, and recycle hints are published in WHC'S newsletters. Credit for program success is shared with every person on the Site. Problems with specific buildings are addressed with the building administrators, but generic problems or issues are addressed in the newsletters and include a phone number for responses to the article.

The paper recycle program at Hanford received an environmental award in 1992 from the Association of Washington Business. This is the first known environmental excellence award ever presented to Hanford. Additionally, the

1993 DOE Waste Minimization Award for recycling was presented to the Richland Operations Office for the recycle programs currently in place.

### 3.0 SURPLUS CHEMICAL SALES

Past practice within the DOE complex, as well as other federal agencies, has been to classify excess and surplus hazardous chemicals as waste and dispose of them accordingly. New, unused products and bulk products with widespread commercial applications were seldom treated as government property in the literal sense. Increased regulatory requirements and liability concerns only reinforced the mindset of treating these products as waste. Most surplus products were buried. The cessation of the defense production mission at Hanford placed increased visibility on the large quantities of surplus chemicals available, and the growing awareness of waste minimization techniques fostered a questioning attitude of our past practices. In many cases, the removal of the chemical products from a deactivated facility was a pacing activity.

In late 1991, a principal engineer at the Plutonium/Uranium Extraction (PUREX) facility was faced with the first major disposition of surplus bulk chemicals resulting from facility closures. The engineer was unwilling to accept the prospect of generating hazardous waste from new products. Contacts were initiated with other DOE sites and throughout private industry to inquire about uses for these products. By questioning a long standing past practice, it became apparent that there were alternatives to waste disposal.

In early 1992, an ad-hoc committee was formed comprised of representatives of PUREX Operations, Procurement and Materials Management, Waste Minimization, Quality Performance and Assessment, and Hazardous Materials Operations. General consensus was reached quickly that a surplus chemical program was viable and necessary as an integral part of the Hanford cleanup. The cessation of defense production had created a large surplus of new, unused products throughout the Site, and many facilities were faced with the same dilemma. The pacing activity for program implementation centered around an initial determination of regulatory requirements, authority, and liability concerning the transfer, reassignment, or possible sale of hazardous material.

Materials Management assumed the lead in this initial investigation. An assumption was made early on that new surplus chemicals and other hazardous products are, at their most simplistic level, merely another classification of government property. The redeployment, transfer, and sale of government property is controlled by the Federal Property Management Regulations (FPMR). The FPMRs were found to contain no guidance on this subject matter. During the time frame of the study, Materials Management had been in routine contact with the General Services Administration (GSA) Headquarters seeking fixed price sale authority for the overall public sale program. GSA was queried concerning surplus hazardous materials and it was discovered that an interim guidance letter on this subject matter had in fact been issued in February

1990 and that a formal rewrite of FPMR 101.42<sup>1</sup> was in process to formalize the changes. Our research concluded that few government agencies knew of the interim guidance, or were reluctant to use the process. Materials Management obtained the interim guidance, and after careful interpretation concluded that there was sufficient control to proceed with establishing a formal program.

Using the surplus PUREX chemicals as the first major test, the products were formally declared "excess" to the needs of the project and made available to other Site users, DOE sites, and Federal and State agencies for redeployment. In conjunction with this mandatory screening process, a determination was made that those items remaining at the conclusion of the screening cycle would be sold publicly via sealed bid. Generation of the first Invitation For Bid (IFB) for this activity involved an extensive review of each product to be offered for sale to determine their hazards and logistics. Material Safety Data Sheets (MSDS) and all other available product documentation was gathered and reviewed before development of the IFB. The terms and conditions of sale were modified to incorporate the liability requirements specified in the GSA interim guidance letter. Since many of the items were stored in bulk holding tanks, a plan was developed to allow successful bidders an opportunity to sample certain products for chemical content before formal acceptance of an offer to purchase. As the IFB was being formalized, market research was conducted to develop a bidder's list comprised of qualified, responsible, and interested buyers.

In its final, approved format, the IFB contained 21 products, totaling 138,300 gallons of bulk, 486 drums, and 290 bags. The IFB was provided to 22 bidders. Five bidders responded in April 1992 and 13 of the products, or 62% of the total, were sold in the initial offering. Approximately \$86,000 in revenue was realized from the sale and approximately \$475,000 in potential waste disposal costs were avoided.

In addition to the bulk chemicals, a concurrent program was developed to deal with small consumer type products, such as janitorial supplies, cleaning products, lubricants, and paints. These products are excessed in the same manner and, when available for sale, are sold at public auction. The first public auction of consumer chemicals was conducted on April 11, 1992. Auctions of consumer products have continued on a quarterly basis with an excellent success rate. To date, 92% of all products offered have been sold, generating approximately \$5,100 in revenue and approximately \$50,000 in waste disposal cost avoidance.

During the initial redeployment and sales activities, the committee continued to meet on a regular basis to critique progress and to refine the process. Upon conclusion of the first sealed bid sale, a formal critique was held. The first sale was deemed successful, but several areas of improvement were obvious. Logistical problems developed during loadout. Most concerns were primarily related to the degree of planning and scheduling required of badged buyers, providing plant forces and equipment to support loading, and meeting the buyers expectations for quick turnaround. The sampling option offered to buyers was heavily exercised, and our efforts were often

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<sup>1</sup>57 FR 39121, "Utilization and Disposal of Hazardous Materials and Certain Categories of Property-Final Rule," *Federal Register*, August 28, 1992.

disjointed. U.S. Department of Transportation requirements were met for each shipment, but often at the last minute. The transportation requirements must be researched and specified as early on in the excess cycle as possible. The committee developed a formal checklist detailing the full range of activities and interorganizational interfaces required for a smooth transfer of the material. This formal checklist has now been incorporated into the overall program.

News of the initial success of the program travelled quickly throughout the Hanford Site with an instant and dramatic increase in customer inquiries on how to use the new program. In May 1992, an "All Managers" guidance letter was issued to the Site detailing the process and providing a desktop instruction for Site customers on using the program. Formal points of contact were established, and dedicated personnel assigned to support the program. Within 3 months, approximately 300 Site customers had identified an additional 600 products to be tracked through the cycle.

The overall publicity of this programmatic effort has been noteworthy. The principal engineer from PUREX, Ravinder K. Bhatia, instrumental in the birth of the program, received the George Westinghouse Total Quality Achievement Award. Details of the program have been shared nationwide with other M&O Contractors, and other Federal agencies. Program success stories have been aired on local television and radio stations, and have now been published in several trade journals.

A second sealed bid sale is now in progress. Sixty-two products were offered including 9 products unsold in the previous sale. Preliminary indications are that 31 products will be sold with an estimated \$37,000 in revenue and \$475,000 in waste disposal cost avoidance.

It should be noted that since program inception, none of the identified products have been declared waste. Efforts will continue to redeploy or sell all products until every possible option has been exhausted.

In August 1992, GSA formally issued the new FPMR 101.42. This standard provides detailed requirements for the disposal of the full range of hazardous materials, not just chemicals. The WHC program is currently being expanded to include that full range of products, and efforts are underway to communicate expansion of the program to our Site customers.

The redeployment or sale of usable hazardous material represents an opportunity to significantly reduce potential waste and makes a viable contribution to environmental awareness and protection. The process has proven to be lengthy. Initial identification to final disposition can take up to 6 months. Regulatory requirements for this activity are specific and mandatory, and the consequences of inappropriate action are unacceptable. It is essential that each product be evaluated on a case-by-case basis for the specific nature of its hazard, marketability, packaging, and transportation requirements. Once these issues have received careful consideration, communication, proper planning, and the development of a strong network of interorganizational support become key factors in program success.

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