



COLORADO DEPARTMENT OF HEALTH

Richard D. Lamm
Governor

Frank A. Traylor, M.D.
Executive Director

September 17, 1982

WM-9
PDR
(Return to WM, 623-SS)

Ros
Ross Scarano
Low Level Waste Management Branch
Nuclear Regulatory Commissions
Mail Stop 483-SS
Washington, D.C. 20555

Dear Mr. Scarano:

As per our agreement to keep you abreast of Chem-Nuclear Systems, Inc. activities in Colorado, please find enclosed a fact sheet which they prepared for a meeting with the agencies which will be involved with their application.

If you have any questions do not hesitate to contact this Division.

Sincerely,

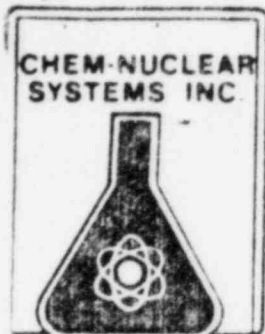
W. Jacobi
W. Jacobi, Section Chief
Radiation Control Division

WJ/ms

cc: John Collins

Enclosure

8301180070 820917
PDR WASTE PDR
WM-9



MONTROSE-WEST WASTE MANAGEMENT FACILITY

FACT SHEET

P.O. Box 1856
Bellevue, Washington 98009

CONTACT: Louise Dresse, Manager
Site Development
(206) 827-0711

CHEM-NUCLEAR SYSTEMS, INC., HAS PREPARED THESE FACT SHEETS ON VARIOUS ASPECTS OF THE PROPOSED MONTROSE-WEST WASTE-MANAGEMENT FACILITY. THE SUBJECTS INCLUDE:

1. Chem-Nuclear's Qualifications
2. The Market for Montrose-West Waste Management Facility
3. The Site Screening Process
4. Detailed Site Characterization
5. Montrose-West Waste Management Facility Operations
6. Safety Foremost
7. Transportation to the Montrose-West Waste Management Facility
8. Site Closure & Reclamation
9. Community Benefits
10. The Employment Outlook with Chem-Nuclear



MONTROSE-WEST WASTE MANAGEMENT FACILITY

P.O. Box 1866
Bellevue, Washington 98009

FACT SHEET

CONTACT: Louise Dresen, Manager
Site Development
(206) 827-0711

1. CHEM-NUCLEAR'S QUALIFICATIONS

Chem-Nuclear is pleased to be working with the Montrose-West business community. Since 1969 the corporation has served generators of low-level radioactive waste nationwide. The Low-Level Radioactive Waste Management Facility, near Barnwell, South Carolina, is a model disposal site. The company is considered by regulators and local citizens alike to be a valued and responsible part of the Barnwell community. A growing transportation center controls more than 40 tractor/trailer units. Mobile and field operations are also controlled from Barnwell to bring needed waste volume reduction and solidification services directly to the generators' locations. Chem-Nuclear is one of the largest low-level radioactive waste management firms in the world.

In the mid-1970's, Chem-Nuclear applied our successful experience to the increasingly regulated field of industrial chemical waste management. The company operates chemical waste treatment and disposal facilities near Arlington, Oregon, and Grand Rapids, Michigan. In addition, the company specializes in the restoration of abandoned, unsafe chemical waste sites.

Chem-Nuclear's success has come from a company-wide philosophy of regulatory excellence. In the words of President Bruce W. Johnson, "Regulators are our first customers, and if we can't satisfy them, we are out of business". Applied to all operations, this philosophy means strict compliance with and accountability for all applicable regulations, with a goal to exceed them whenever possible. Our track record documents the success of this approach. It has allowed us to maintain healthy growth in partnership with the

Fact Sheet 1

Page 2

communities in which we operate. We bring this commitment to quality of operations and concern for the well-being of our employees and neighbors to the Montrose-West project and are confident that it will prove to be a productive and cooperative relationship.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

P.O. Box 1866
Bellevue Washington 98009

FACT SHEET

CONTACT: Louise Dreesen, Manager
Site Development
(206) 827-0711

2. THE MARKET FOR THE MONTROSE-WEST WASTE MANAGEMENT FACILITY

Chem-Nuclear Systems, Inc. has performed a preliminary market assessment to determine what the waste disposal needs are in the area. The major waste categories are described below.

Several mills exist or are proposed on the Western Slope of Colorado to extract uranium from ore for ultimate use in generating electricity. These mills produce large quantities of mill tailings by-product that must be disposed of safely.

Milling operations have taken place at several locations in Colorado since the 1940's. At many of these, piles of mill tailings need to be removed and stabilized. Also, nine sites in Colorado contain large amounts of tailings resulting from early work for the Atomic Energy Commission that must be cleaned up as mandated by the Uranium Mill Tailings Act of 1978. The DOE plans to stabilize most of these on their present locations but feels it may be necessary to move the piles at Durango and Grand Junction to another site.

In the early 1900's, a number of radium processing plants operated in the city and county of Denver. Numerous businesses have unknowingly built on the radium-contaminated residues, and thirty-one sites have been identified for cleanup. Several other small radium sites not covered in the Health Department plans are located in Montrose.

Thus, Colorado (especially the Western Slope), has a large number of mill tailings sites which require stabilization in place or movement elsewhere.

Chem-Nuclear proposes to develop a disposal facility to consolidate these mill tailings and radium wastes in a single location. This operation will serve to clean up these environmental problems scattered throughout Colorado, substantially reduce the effort to care for the wastes in the future, and make it more economical to manage uranium mill tailings.

Colorado also faces a related need for a low-level radioactive waste disposal site. These wastes are generated in medical diagnosis and therapy; chemical, agricultural and medical research at universities; industrial manufacture of well-logging devices, smoke detectors, etc; and production of electricity.

Low-level wastes include:

- o gloves, clothing, paper and plastics
- o tools and equipment
- o laboratory glassware and syringes
- o construction materials and rubble
- o filter aids such as resin beads, similar to those used in water softeners
- o solidified liquids

These wastes should not be confused with spent reactor fuel or with high-level waste, much of which is a by-product of the federal nuclear weapons program.

Six Rocky Mountain states (Colorado, New Mexico, Arizona, Nevada, Wyoming and Utah) have drafted an interstate compact to provide an effective and economical way to handle this region's low-level waste. According to this compact, each state generating over 20% of the region's waste will be required to host a new site to replace the one currently operating in Nevada. Colorado currently generates more than 80% of the waste. Thus Colorado may be a likely host state in the next four to five years.

The Rocky Mountain region generates a relatively small volume of low-level waste (i.e., 50-100,000 cubic feet per year versus 1.2 million cubic feet

received at our Barnwell site). The site development costs are similar for either large or small sites, however, so the smaller baseload would mean that prices at a small site could be as much as 10 times those at a larger site. This economic feasibility is another reason Chem-Nuclear proposes to co-locate the Rocky Mountain low-level waste site with the Montrose-West Waste Management Facility. The shared licensing and construction costs will solve several problems safely while providing more economical waste management. More important, this co-location will enable us to create more jobs and more local purchases in the West End.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

P.O. Box 1856
Bellevue, Washington 98009

FACT SHEET

CONTACT: Louise Dresen, Manager
Site Development
(206) 827-0711

3. THE SITE SCREENING PROCESS

Protection of public health and the environment is the number one priority for the Montrose-West Waste Management Facility. The natural features of the site selected will form the cornerstone of an effective and safe waste management system, so selection of the specific area must be made carefully.

A preliminary technical screening process was used to eliminate unsuitable areas according to land use (high population density or significant natural resources) and designation as wetlands or flood plains.

The next set of areas eliminated were those with substantial wind and water erosion, significant geologic faulting or seismic or geothermal activity. We also avoided recreation areas, historic areas, and critical wildlife habitats.

After we eliminated the areas described above, we searched for regions with specifically preferred features. The Colorado state government, for example, has identified Mancos or Lewis shale formations as preferred areas for waste disposal sites. In addition to the preferred shale, areas furthest separated from aquifers (underground water sources) were sought. We also looked for high evaporation rates, relatively flat topography, and few or no surface streams.

Four preliminary sites were identified in the West End of Montrose County and were ranked in order according to their suitability, with the added considerations of transportation access and proximity to towns and drinking water wells. A 900-acre tract southwest of Naturita received the highest

ranking. That particular land meets or exceeds all of Chem-Nuclear's stringent siting criteria.

The selected site must now undergo further examination of its geology, hydrology, topography, climate, ecology and socioeconomics. If it proves technically suitable, and all current information indicates that it will, the development of the facility can proceed. If it is technically inadequate in any way, our company will not develop a facility there.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

P.O. Box 1866
Bellevue Washington 98009

FACT SHEET

CONTACT: Louise Dressen, Manager
Site Development
(206) 827-0711

4. DETAILED SITE CHARACTERIZATION

The site selected for the Montrose-West Waste Management Facility must be carefully tested and evaluated to decide if it is technically suitable for safely containing the waste materials. This process is called detailed site characterization, and is performed on the prospective site identified in the preliminary site screening. Chem-Nuclear has begun a detailed characterization of a 900-acre site southwest of Naturita.

During site characterization, a large amount of information will be collected on the site, considering at least these factors:

- o geology
- o hydrology
- o climate
- o air quality
- o ecology
- o land uses
- o cultural resources
- o socioeconomics
- o transportation

All of the information collected will be used to predict the long-term stability of the site, to assess potential environmental impacts, and to prepare the environmental report needed for licensing by the State of Colorado Department of Health.

Site characterization will be done in two phases. Phase I will focus on the geology and hydrology of the site.

- o Mapping of the surface features to identify bodies of water, drainage areas, landslide or erosion areas, and flash flooding potential.
- o Drilling of test holes to sample soil materials and test for moisture, waste isolation characteristics, and permeability.
- o Deep drilling to log the hydrogeologic conditions and assess groundwater conditions.

The information obtained from this first phase of characterization will enable Chem-Nuclear to decide if further investigation is warranted. During Phase II, an extensive field program will begin, considering both regional and site-specific aspects:

- o Complete definition of surface and underground geology, including aerial photography, topographic mapping, geologic cross-sections, geophysical surveys, and laboratory testing of samples.
- o Additional borehole drilling to better define soil characteristics.
- o Definition of groundwater conditions (aquifer location, depth to groundwater, use of water supply), and 12-month groundwater sampling and analysis data.
- o Installation of a 30-foot weather tower to measure temperature, wind, humidity, and precipitation for one year.
- o Continuous air sampling and chemical & radioactivity analysis.
- o Inventory of the area's natural plants, crops, and animals, both wild and domestic.

- o History, land use, transportation, housing, health care and cultural resources assessment.

All of this information will be compiled into the environmental impact report, required as part of the licensing process, and will allow a decision to be made on the site's ultimate suitability for radioactive waste management.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

P.O. Box 1866
Bellevue, Washington 98009

FACT SHEET

CONTACT: Louise Dressen, Manager
Site Development
(206) 827-0711

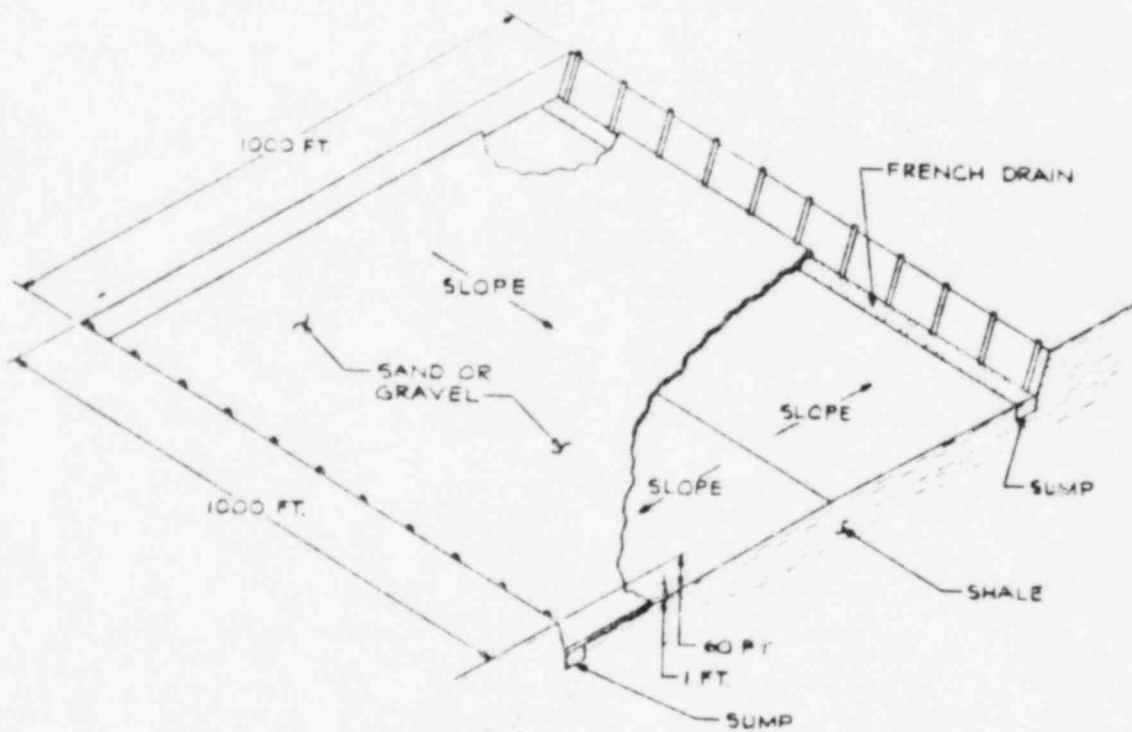
5. MONTROSE-WEST WASTE MANAGEMENT FACILITY OPERATIONS

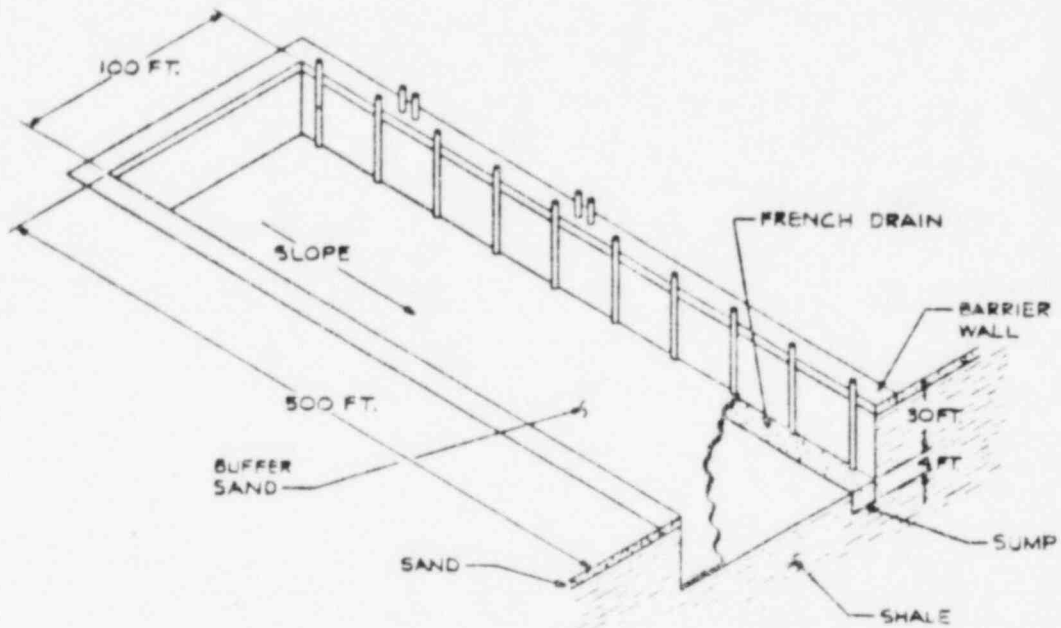
The requirements for developing and operating a waste management facility include stringent technical and operational features. We can best describe the site as seen from the perspective of a truck driver approaching with a load of waste.

As each truck arrives at the facility, it will enter a security fence surrounding the disposal area. Facility staff will admit each shipment, which must then undergo quality assurance and health physics inspections. These inspections are designed to prevent safety problems, discrepancies in recordkeeping, and possible problems of radioactive contamination. On a random basis, an individual shipment may also be carefully inspected by state or federal officials as well. Paperwork accompanying the shipment will be checked and entered into the computerized recordkeeping system.

Several buildings will be constructed on the site, beginning with a reception/administration structure, a health physics facility, truck maintenance and decontamination buildings and a completely equipped analytical laboratory. Large excavations will be engineered to receive waste in bulk soil form, and a smaller number of trenches will be excavated for certain limited waste streams that will be packaged in drums, boxes and shielded casks. The large excavated cells will measure about 1,000 feet square by 60 feet deep, and will be entered by a sloped equipment ramp at either end. The trenches will be about 500 feet long by 100 feet wide and approximately 30-50 feet deep.

Both types of excavation will be engineered with drains and slopes for proper flow of any water entering the trench to pumpable collection points. The schematic drawings below illustrate the construction of the two types of excavation. A monitoring system beneath and around each cell will detect any movement of radionuclides and allow for early corrective action. To supplement these sampling points, the overall site environmental monitoring program will regularly monitor ground and surface water, air, soil, and vegetation from around the site and outside its boundaries. As part of the state regulatory program, state inspectors will also monitor site performance in safely containing the waste materials and ensuring that no contamination reaches the biosphere.





As part of our application for an operating license, we will prepare a detailed plan for eventual stabilization of the excavated areas to result in a fully stabilized site that presents no environmental hazard and requires very little custodial care. Many constructive uses can be considered for the land, once the site has been closed and deeded to the state for long-term monitoring. Uses could include parks, grazing land, tree farms, or similar developments.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

P.O. Box 1856
Bellevue, Washington 98009

FACT SHEET

CONTACT: Louise Dressen, Manager
Site Development
(206) 827-0711

6. SAFETY FOREMOST

"Safety is almost a religion at Chem-Nuclear . . . I wish everyone in the United States could see first-hand the meticulous care and scientific methods they utilize".

Joe Wilder - WBAW Radio
Barnwell, South Carolina

Safe operation of the Montrose-West Waste Management Facility is our number one concern, and Chem-Nuclear is committed to ensuring that our excellent corporate track record of safety is maintained. Throughout the company, our focus will be on designing and managing the facility to exceed regulatory standards and fully protect the health of our employees and neighbors. The well-being of the community is essential to the success of our business.

This commitment to safety is demonstrated by the corporate resources and authority granted to quality assurance, regulatory compliance and health maintenance. From the time a waste shipment enters the gate until that waste is finally disposed and the truck released to the highway, formal operating procedures govern each step. These procedures, approved as part of the site operating license, specify techniques for inspecting shipments on arrival, safely unloading the waste materials and covering the excavation, decontaminating trucks and containers and monitoring personnel for possible exposure to radioactivity. For example, a particular shipment may undergo 3-4

inspections before it is allowed to enter the site, and health physics staff monitor continually for air emissions of radioactivity during unloading operations.

While site operating personnel report to the facility manager, the regulatory, safety and quality assurance staff report directly to the president of Chem-Nuclear Systems. Their responsibility is totally focused on safe operations, and they have the authority to close down operations on the spot if any problem is detected.

This paramount concern for safety has resulted in an exceptional track record at the other facilities operated by Chem-Nuclear and its subsidiaries: Barnwell, South Carolina, Low-Level Radioactive Waste Disposal Site; Arlington, Oregon, Pollution Control Center; and Cascade Resource Recovery, Grand Rapids, Michigan. We bring an identical concern for safety and integrity of operations to the Montrose-Kest Facility.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

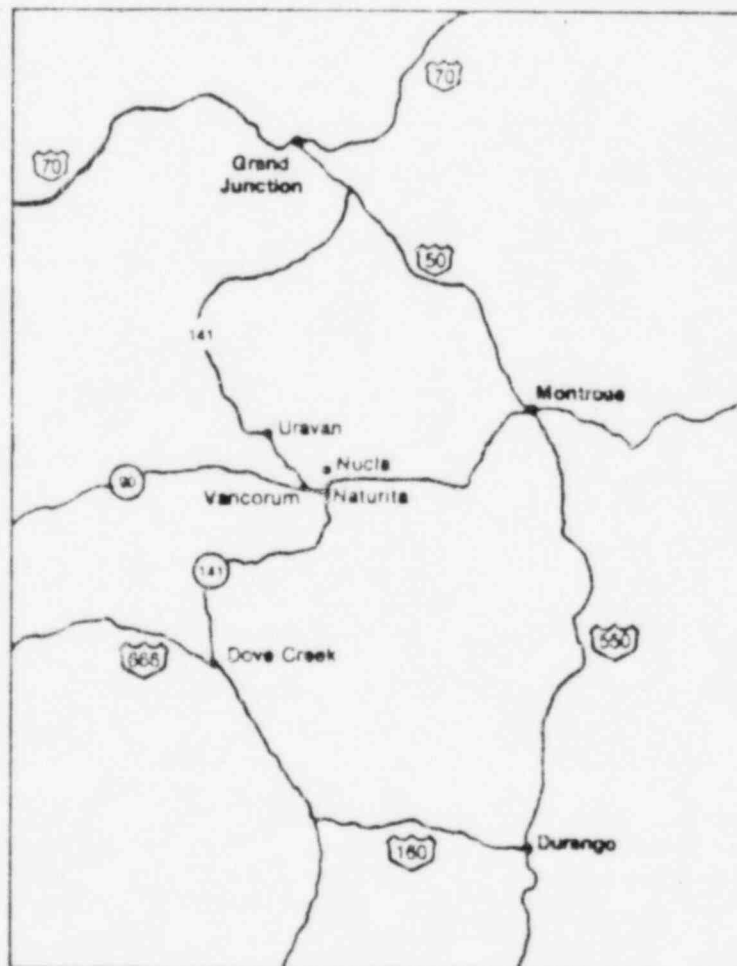
P.O. Box 1866
Bellevue, Washington 98009

FACT SHEET

CONTACT: Louise Dressen, Manager
Site Development
(206) 827-0711

7. TRANSPORTATION TO THE MONTROSE-WEST WASTE MANAGEMENT FACILITY

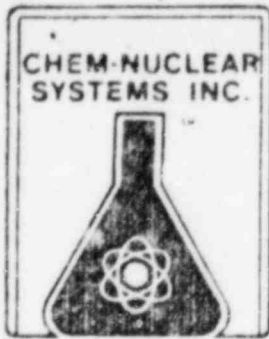
Materials will travel by truck from all over western Colorado to Chem-Nuclear's 900-acre site near Naturita. Although most will originate in-state, Chem-Nuclear expects that some wastes will come from surrounding states, depending on the need for disposal. The map below illustrates the ease of access to the facility via state and county roads, and shows the key local points where fuel and accommodations may be needed.



All transportation of radioactive materials is regulated by the U.S. Department of Transportation and by state guidelines as well. These regulations specify requirements for truck safety, waste packaging, labeling, monitoring, inspections and driver training. Shipments are inspected in transit and site acceptance procedures will require thorough inspection of each vehicle and load.

Bulk mill tailings will be shipped to the Montrose-West Facility in sealed trucks. Low-level wastes from the entire region may typically arrive in lead-shielded casks, metal drums or wooden boxes in vans or on flat-bed trailers. Each shipment will be accompanied by a waste manifest form which will be used to track the progress of the material from the generation or source point through final disposal. Each manifest will become part of the company's computerized permanent records.

Projections of the available market indicate that the combination of commercial tailings (old & new), government remedial action waste, radium cleanup waste, and low-level radioactive wastes from the compact region, represents 20-30 years of waste receipts at an average rate of approximately 750,000 tons per year.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

FACT SHEET

P.O. Box 1866
Bellevue, Washington 98009

CONTACT: Louise Dressen, Manager
Site Development
(206) 827-0711

8. SITE CLOSURE & RECLAMATION

The Montrose-West Waste Management Facility is a major investment for Chem-Nuclear. We expect to operate it for at least 30 years. When the time comes to close it, however, the site will be securely stabilized and prepared for long-term care and reuse. With that goal in mind, we will design the facility and structure the operating procedures so the excavated areas are stabilized as they are filled and so a minimal effort is needed at closure. All necessary reclamation will be done to prepare the site for useful purposes.

As part of Chem-Nuclear's application to the Colorado Department of Health for an operating license, a comprehensive closure and reclamation plan will be required. That plan will describe closure procedures and estimate the costs for the program.

At the time of closure, any remaining waste will be buried and the last open excavations filled and capped in accordance with the operating license. The ongoing system to avoid erosion of the trench caps will be completed, including ground contouring and reseeding with a hardy, short-rooted vegetation such as Russian rye or crested wheat. Site buildings will be removed as necessary, and the waste accountability record-keeping system will be transferred to the state for long-term archiving. Permanent granite markers will indicate the corners of each excavation and the materials contained in each.

The environmental monitoring program which operates during the years when the facility is open will be continued after closure (e.g. sampling and analysis of water, soil, air and vegetation). Routine inspections of the stabilized excavation areas will detect any settling or damage to the covering material so that it can be immediately corrected, and any necessary grounds-keeping will be done. The overall objective, however, will be to place the site in a sufficiently stable and reclaimed state so as to require only minimal maintenance. Radiation levels at the surface will be no more than background levels at all times.

Funding for long-term care will be provided by surcharges on waste volumes received at the facility. Those funds will be turned over to the state and managed in a dedicated escrow account, set aside to be used only for the specified purpose of long-term site care.

There are many possibilities for reuse of the site land after closure and reclamation. Since the excavated areas will be fully stabilized and covered and surface radiation levels will be no higher than natural background, it should be feasible to use the land for recreation, grazing, or other similar surface activities. Chem-Nuclear will work closely with the State Health Department to design a post-closure program that is most useful to the local area.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

FACT SHEET

P.O. Box 1866
Bellevue, Washington 98009

CONTACT: Louise Dressen, Manager
Site Development
(206) 827-0711

9. COMMUNITY BENEFITS

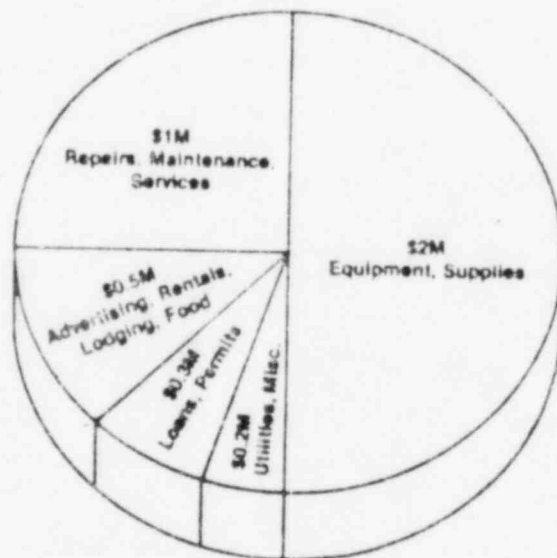
New industry in your local community means a real boost to economic and civic progress. For Chem-Nuclear, our investment in a waste management facility in the West End expresses our confidence and interest in the people of the area, their well-being and their future. Successful experience in other communities has taught us that being a responsible corporate citizen and a working partner in the area's development provides the kind of environment in which we can grow and prosper together. The development and operation of an integrated waste management facility involves a significant investment of time and money, and will benefit your community in the following ways:

- o Local jobs, taxes, and purchases naturally occurring from facility construction and operations
- o Associated businesses and services
- o "Good Neighbor" benefits

In turn, Chem-Nuclear benefits from the strength of the local workforce, from regional supporting services such as contractors and suppliers, and from an active participation in a healthy, growing community. We would like to introduce you to some of the factors that make a waste management facility a real asset.

Our corporate policy mandates that operating supplies, equipment, and services must be purchased whenever possible in the communities where we operate. This is a commitment we take very seriously. A typical year in Barnwell now means over 6 million dollars in expenditures in the local area. We foresee a

generally similar profile of purchases for the Montrose-West facility once it is up and running, although the value may be somewhat lower in Montrose-West (\$3-4 million). The following drawing illustrates the estimated local purchases. The segment entitled "Repairs, Maintenance and Services", for example, will include such things as car and truck repairs, medical care, welding, construction, and excavation. "Equipment and Supplies" is a major category, covering fuel for the site vehicles and transportation fleet, cement, postage, office and maintenance supplies, trucks and vans and replacement equipment, etc.



During the facility development phase, similar emphasis will be placed on buying locally. Fencing, construction, heavy and light equipment, and many other capital expense items can come from local business suppliers. We anticipate building a good working relationship with local firms during development so that we can be assured of supply and service availability throughout operations.

Tax benefits to the local area and the state include real estate taxes, personal and other property taxes, disposal fee surcharges, and possibly business operating taxes. On approximately \$2.5 million in real property, we would expect to pay about \$27-30,000 per year in taxes. The sales taxes on purchases should also contribute from \$100-150,000 to the local community.

You have read so far about the tangible benefits the proposed waste management facility may bring to your community -- local purchases, jobs and training, and an increased tax base. Added to that significant package of benefits, the Chem-Nuclear Montrose-West facility will be a good neighbor, and will contribute to the spirit of healthy community growth.

Our operation will be totally open. Chem-Nuclear is unique among similar corporations because we actively encourage people in our site communities to find out all they can about us. Many of the community's neighbors, friends, and family members will be working at the facility and will be in a good position to share information on how it operates. Site management will plan frequent tours and open houses for interested individuals and groups and will make every effort to provide residents with information on the basic workings of the facility, as well as any new systems which are added.

Contributions to the community will also make the Chem-Nuclear facility a good neighbor. Site safety and emergency response teams will be made available to assist local fire or police departments when needed. We encourage our employees to participate fully in community service activities, speakers' bureaus, sports teams, and educational activities, and to be responsible, contributing citizens.

It is likely that other related industries may develop in the area, because of the advantages of nearby waste management services and a thriving, growing community and work force. These businesses would bring similar benefits to the West End to complement the operation of our proposed facility.



MONTROSE-WEST WASTE MANAGEMENT FACILITY

P.O. Box 1866
Bellevue, Washington 98009

FACT SHEET

CONTACT: Louise Dessen, Manager
Site Development
(206) 827-0711

10. THE EMPLOYMENT OUTLOOK WITH CHEM-NUCLEAR

The staffing profile for the facility we plan to develop in Montrose County may vary somewhat according to the particular type of operation constructed. It is characterized by a serious corporate commitment to professional development and provides the tools needed for that growth -- aggressive training programs, personal interest, and channels for promotion from within. We anticipate that 90-95% of the staff will be hired from the local area.

The new facility will be staffed in phases while it is being planned, constructed and initially operated. The facility manager will play an early role in the supervision of licensing and permitting, public participation in siting, and final design and construction. After the site is characterized and the facility designs are completed, the manager will begin building a core group of key personnel who will assist in supervising construction and beginning to gear up for operations. Some of these key positions will require specialized technical skills, and the first effort to locate suitable workers will always be made locally. Chem-Nuclear is committed to providing good career opportunities for our employees, and will make every attempt to train and retrain local technicians.

The following table lists all of the personnel categories that are projected for the Montrose-West facility during the initial years of operation. Again, these levels will be dependent upon the size of the operation based on the waste streams to be received, so the listed numbers should only be considered as preliminary estimates.

NUMBER NEEDED1984-90

Site Manager	1
Transportation Manager	1
Manager Regulatory Affairs	1
Manager Personnel	1
Health Physics Supervisor	2
Quality Assurance Supervisor	2
Maintenance Supervisor	2
Safety Supervisor	2
Security Supervisor	2
Heavy Equipment Supervisor	2
Dispatcher	2
Health Physics Technician	10
Quality Assurance Inspector	4
Mechanic	4
Safety Inspector	4
Waste Technician	12
Security Guard	6
Customer Compliance Representative	1
Driver	15
Equipment Operator	8
Training Coordinator	1
Secretary	6
Clerk	12
	<u>TOT</u>

Chem-Nuclear offers a very attractive employee benefits package that combines medical, dental, life, and disability insurance coverage, a fully funded pension plan plus a company-supported thrift savings plan, and full provision for holidays, sick leave, and vacations. A corporate scholarship program will be available for students from the locality, and it may be possible to support specialized technical training programs through local schools. The company reimburses employees for the costs of educational programs related to their jobs, and there may be possible job-sharing, internship or summer employment opportunities.