STATE OF NEW YORK

TAX APPEALS TRIBUNAL

In the Matter of the Petition	:	
of	:	
WEST VALLEY NUCLEAR SERVICES CO., INC.	:	DECISION DTA No. 811511
for Revision of Determinations or for Refunds of Sales and Use Taxes Under Articles 28 and 29 of the Tax Law for the Period December 1, 1985 through February 28, 1990.	:	

Petitioner West Valley Nuclear Services Co., Inc., P.O. Box 191, Rock Springs Road, West Valley, New York 14171-0191, and the Division of Taxation each filed an exception to the determination of the Administrative Law Judge issued on April 11, 1996. Petitioner appeared by Phillips, Lytle, Hitchcock, Blaine & Huber (James A. Locke, Esq. and Martha L. Salzman, Esq., of counsel). The Division of Taxation appeared by Steven U. Teitelbaum, Esq. (Brian J. McCann, Esq., of counsel).

Petitioner filed a brief in support of its exception and in opposition to the Division of Taxation's exception. The Division of Taxation also filed a brief in support of its exception and in opposition to petitioner's exception. Oral argument was heard on June 12, 1997.

After reviewing the entire record in this matter, the Tax Appeals Tribunal renders the following decision.

ISSUES

I. Whether purchases of tangible personal property and services pursuant to a Management and Operating Contract ("the Contract") between petitioner and the United States Department of Energy (DOE) are exempt from sales and use tax under section 1116(a)(2) of the Tax Law because such purchases were made by petitioner as agent for the DOE.

II. Whether the above referenced-purchases are exempt from sales tax because petitioner purchased such property and services for resale to the DOE.

III. Whether the Division of Taxation should be estopped from assessing sales and use taxes against petitioner herein because petitioner reasonably relied to its detriment on a letter dated February 22, 1982 issued to petitioner by the Division of Taxation.

IV. Whether particular purchases of property and services made pursuant to the Contract are exempt from tax pursuant to Tax Law § 1105(c)(3)(iii) or § 1115(a)(15), (16).

V. Whether particular items purchased under the Contract qualify for the research and development exemption from tax under Tax Law § 1115(a)(10).

FINDINGS OF FACT

We find the facts as determined by the Administrative Law Judge. These facts are set forth below.

HISTORY OF THE PROJECT SITE

In the early 1960's, New York State, through what is now known as The New York State Energy Research and Development Authority ("NYSERDA"), a public corporation, obtained title to approximately 3,300 acres of land in which to develop a nuclear research and development presence in Western New York. Between 1962 and 1966, Nuclear Fuel Services, Inc. ("NFS"), a subsidiary of W.R. Grace Company, designed and built a plant for commercial nuclear fuel reprocessing at the site and operated the plant from 1966 to 1972. Between 1966 and 1972, NFS reprocessed approximately 640 metric tons of nuclear fuel. Among other things, the reprocessing produced radioactive waste material, which was mixed with sodium hydroxide to change it from an acidic to a basic (pH) material, and stored in an underground carbon steel tank. In 1972, the facility was shut down for expansion to increase the plant's capacity.

During the 1970's, regulations, including seismic requirements imposed by the U.S. Nuclear Regulatory Commission, became more stringent. NFS eventually decided to go out of the commercial fuel reprocessing business because the requirements for strengthening the existing plant appeared to not be cost effective. In April 1976, NFS notified NYSERDA of its intention to withdraw from the nuclear fuel reprocessing business and terminate its lease with NYSERDA on December 31, 1980.

WEST VALLEY DEMONSTRATION PROJECT ACT

In 1980, the U.S. Congress passed the West Valley Demonstration Project Act (Pub L 96-368) (the "Act"), authorizing the U.S. Department of Energy (the "DOE") to carry out a high-level nuclear waste management demonstration project at the site for, among other things, "the purpose of demonstrating solidification techniques which can be used for preparing high level radioactive waste for disposal." (Pub L 96-368, § 2[a].) The DOE is the Federal agency responsible for converting the existing liquefied high level radioactive waste to a solid form. The Act specifies that 10 percent of the costs of the West Valley Demonstration Project (the "Project") shall be paid by New York State, the remainder (90 percent) shall be paid by the DOE. (Pub L 96-368, §§ 2[b][4][C]; 3[b].)

Section 2(b)(4) of the Act provides that the Secretary of the DOE shall enter into a cooperative agreement with New York State. Effective October 1, 1980, a Cooperative Agreement was signed between the DOE and NYSERDA on the Western New York Nuclear Service Center at West Valley, New York (the "Cooperative Agreement"). The Cooperative Agreement provides that the DOE shall pay 90 percent of the total Project costs and NYSERDA shall pay 10 percent of such costs.

The project generally occupies approximately 200 acres within the 3,300 acre parcel owned by NYSERDA. Pursuant to the Cooperative Agreement, the DOE has assumed exclusive use and possession of the Project's premises (the 200 acres including the building, facilities and improvements thereon) for purposes of the Project. However, NYSERDA has retained title to the Project's premises. Use and possession of the Project's premises will be surrendered to NYSERDA upon completion of the Project. Additionally, it should be noted that Section 4.03 of the Cooperative Agreement and Section 2(a)(5) of the Act provide generally that the Project plant and premises must be decontaminated and decommissioned upon completion of the Project.

THE CONTRACTUAL RELATIONSHIP BETWEEN PETITIONER AND THE DEPARTMENT OF ENERGY

Petitioner, West Valley Nuclear Services Company, Inc. (sometimes referred to herein as "WVNS"), was formed as a subsidiary of Westinghouse Electric Corporation for the purpose of competing for the management and operating contract for the Project and, subsequent to winning the competition, fulfilling that contract. Petitioner has not engaged in any other business or activity other than its contract with DOE. Pursuant to DOE Contract No. DE-AC07-81NE44139 between DOE and petitioner (the "Contract"), which became effective August 26, 1981, petitioner operates, manages and performs a wide range of services for the DOE at the Project. The Contract, which provided for an initial term of five years, is a cost reimbursement management and operating ("M&O") contract. The Contract was a cost-plus fixed fee arrangement through September 30, 1983. The parties subsequently converted the Contract to a cost-plus base fee and award fee arrangement. Upon this arrangement, a portion of petitioner's fee was based on the DOE Project Director's evaluation of petitioner's management practices.

Generally, the Contract requires petitioner to manage, operate, and maintain the facilities of the Project, and to be responsible for overall program management including planning, scheduling, cost estimating, and system integration. In this regard, the Contract requires petitioner to appoint a full-time resident supervising representative, acceptable to DOE's contracting officer, who shall be in charge of all Project work at all times. The Contract further requires petitioner to be responsible for the employment of all personnel engaged in the work of the Project and for their training (and such personnel are not to be deemed employees of DOE or the U.S.); to administer all subcontracts, purchase orders and other contractual agreements made by petitioner; and to be responsible for maintaining satisfactory levels of employee competence, conduct and integrity.

As the DOE's M&O contractor for the Project, petitioner is subject to rules and regulations applicable to M&O contractors, which are identified in the Contract. In addition to

the Contract, the relationship between petitioner and the DOE is governed by those provisions of the Federal Acquisition Regulations (found at 48 CFR ch 1) (the "FAR"), formerly known as the Federal Procurement Regulations, and the Department of Energy Acquisition Regulations (found at 48 CFR ch 9) (the "DEAR") which are identified in the Contract. Many provisions in the Contract are direct quotes from the FAR and the DEAR. In fact, the 1986 version of the Contract includes direct and specific reference to the applicable regulations. The DEAR regulations include specific terms that must be included in an M&O contract. The DEAR includes a unique section regarding "M&O Contracting."

PROCUREMENTS AND PROPERTY MANAGEMENT

As will be shown, petitioner made a substantial amount of purchases under the Contract during the audit period. Petitioner's procurement policies and procedures, for which DOE approval is required, are included in its Procurement Manual. The Procurement Manual incorporates many provisions of the FAR and the DEAR and is modified to account for changes in regulations. The policies and procedures listed in the Procurement Manual summary and the summary itself are approved by DOE and cannot be changed without DOE approval. The Procurement Manual covers procedures and policies starting in the planning stage of procurements through the close out of procurements. The Procurement Manual also prescribes the method for implementing those policies and procedures which are subject to DOE approval.

Prior to the start of each fiscal year (October 1, through September 30), petitioner proposes the fiscal budget for the Project for that year. Petitioner submits the budget to the DOE for approval. When an employee of petitioner wants to purchase a piece of equipment for the project, the equipment would normally have been included in petitioner's budget recommendation and in the approved budget. If the item had not been included in the approved budget, it cannot be purchased. Thus, the first step in procurement of an item for the Project is to see if the item is in the budget.

If the item is in the budget, it is then identified via a specification (i.e., a description of the work and basic and minimum requirements). During the audit period, the requisition for

any expenditure over $10,000.00 required DOE review. The requisition for the item is prepared, signed by the employee requesting it, his immediate manager, and the budget person responsible for the applicable cost account. Depending on the price of the item, it may be signed off by petitioner's president before it is sent to petitioner's purchasing department.

When the approved requisition reaches petitioner's purchasing department, the purchasing department determines the applicable procedures for acquiring the item based on the Procurement Manual. Petitioner's purchasing department sends out for competitive bid proposals, if applicable, for the item, receives and evaluates bids, sends the proposals to the requisitioner, negotiates for the purchase, and prepares purchase orders to which its terms and conditions (which are approved by the DOE) are made applicable. If the award of the contract to a vendor requires DOE approval prior to award, petitioner requests DOE approval before awarding the contract and placing the purchase orders. The DOE's contracting officer for the Project is responsible for reviewing and approving purchases for the Contract. The contracting officer's procurement responsibility is to ensure that all Contract and applicable FAR and DEAR requirements are applied and to ensure that petitioner's procurement policies comply with the FAR and the DEAR. The DOE contracting officer does not always approve the purchases for which DOE approval is sought. For example, the DOE may determine that an item or service is not needed or may determine that the procurement process was deficient or noncompliant. In those cases, the DOE would identify what action should be taken to rectify the deficiency, which action could include rebidding the requisition.

The DOE monitors petitioner's compliance with the Procurement Manual, the FAR and the DEAR in three ways. First, DOE review or approval is required for certain specific purchases. For example, during the audit period, DOE review was required for all requisitions over $10,000.00 and for certain awards. The current DOE specific approval requirements are set forth in Section 2.0 of the Procurement Manual. Moreover, the DOE has reserved the right to require petitioner to submit for approval any or all procurements under the Contract. Second, during the audit period the DOE contracting officer randomly sampled contracts and reviewed

them for compliance. Third, as required by the FAR, the DOE performs contractor purchasing system reviews of the procurement systems of M&O contractors, including petitioner's procurement system.

Approximately every two years, the DOE has conducted a contractor purchasing system review of petitioner's procurement system. A contractor purchasing system review is a formal, in-depth review of petitioner's entire procurement system. Normally, five to ten DOE personnel are involved. With respect to procurement systems, a contractor purchasing system review includes a review of the contractor's purchasing procedures or manual to make sure it is up-to-date and in line with DOE requirements. In addition, a listing of purchases for the 12-month or 2-year period prior to the review is reviewed for unusual procurements, sole source procurements, procurements from suspended companies, and procurements that could represent unallowable costs. The DOE team performing the review then notifies petitioner of the transactions it wants to review. The DOE reviews the files for the transactions selected. The DOE also reviews procurement activity as it relates to other departments, interviews the professionals, and looks at the adequacy of the training and expertise of the persons involved. After the review, the DOE provides a draft report to petitioner which, in turn, provides comments as to corrective actions to the DOE. The DOE then issues a final report with the corrective action to be taken. A copy of the finalized report is sent to DOE headquarters in Washington, which reviews the report, comments on it and instructs as to what to do about the contractor's purchasing system and future improvements. The DOE then monitors the corrective action via a follow-up audit.

DOE reviews of the procurement systems and procurements of non-M&O contractors are not nearly as extensive as its reviews of M&O contractors. Non-M&O contractors are reviewed under the FAR but not the DEAR. Moreover, that review is very minimal and is directed more toward commercial terms. The DOE generally does not mandate government terms or government-type purchasing procedures for non-M&O contractors.

Throughout the audit period, purchase orders issued by petitioner were made in the name of "West Valley Nuclear Services Corporation, Inc." Petitioner's purchase order forms applicable to the audit period indicate that the order is issued under DOE Contract No. DE-AC07-81NE44139 and is exempt from New York State sales tax. Although the purchase order forms state that a New York State tax exemption certificate is enclosed, petitioner did not acquire a tax exemption certificate from New York State. The purchase order forms do not state that petitioner is the agent of DOE or the United States, or that petitioner could make purchases as agent for DOE. Petitioner's purchase orders also incorporate by reference certain terms and conditions contained in other documents, such as the General Provisions for Fixed-Price Orders (Form No. WV-19059). Form WV-19059 includes the portions of the FAR and the DEAR regulations that are required to be applied to subcontracts for the project. Many of these provisions are not contained in normal commercial contracts. For example, the Service Contract Act (41 USC § 351 et. seq.) and regulations of Secretary of Labor (Subpart C of 29 CFR 4), both of which apply to service procurements by Federal agencies, apply to subcontracts awarded by M&O contractors such as petitioner. The DOE requires petitioner to apply the Service Contract Act regulations (Subpart C of 29 CFR 4) in its subcontracts for services. The inclusion of certain provisions of the FAR and the DEAR in subcontracts are required by 48 CFR 970.71. Different terms and conditions may apply depending upon the dollar amount of the subcontract and, therefore, Form No. WV-19059 is separated into separate sections of applicable terms and conditions based on the dollar amount of the order. Form No. WV-19059 was approved by the DOE.

Section 4.107(b) of the Service Contract Act regulations provide, in pertinent part, as follows:

> "[S]ometimes authority to enter into service contracts of the character described in the Act for and on behalf of the Government and on a cost-reimbursable basis may be delegated, for the convenience of the contracting agency, to a prime contractor which has the responsibility for all work to be done in connection with the operation and management of a Federal plant, installation, facility or program, together with the legal authority to act as agency [sic] for and on behalf of the Government and to obligate Government funds in the procurement of all services and supplies necessary to carry out the entire program of operation. The contracts entered into by such a

> prime contractor with secondary contractors for and on behalf of the Federal agency pursuant to such delegated authority, which have such services as their principal purpose, are deemed to be contracts entered into by the United States and contracts with the Federal Government within the meaning of the Act" (29 CFR 4.107[b]).

This regulation is applicable to subcontracts for services entered into by petitioner as the DOE's M&O contractor for the Project. The DOE has delegated to its M&O contracts the authority discussed in 29 CFR 4.107(b). In this regard, the applicable regulation states that "[i]t is the policy of DOE that subcontracts awarded by management and operating contractors are subject to the Service Contract Act to the same extent and under the same conditions as contracts awarded directly by DOE." (48 CFR 970.7104-19[a].)

Section 10.3 of the Contract, regarding title to property, provides as follows:

> "Title to Property. Title to all property furnished by the Government shall remain in the Government. Except as otherwise provided by the Contracting Officer, title to all materials, equipment, supplies, and tangible personal property of every kind and description purchased by the Contractor, for the cost of which the Contractor is entitled to be reimbursed as a direct item of cost under this contract, shall pass directly from the vendor to the Government. The Government reserves the right to inspect, and to accept or reject, any such property. The Contractor shall make such disposition of rejected items as the Contracting Officer shall direct. Title to other property, the cost of which is reimbursable to the Contractor under this contract, shall pass to and vest in the Government upon (i) issuance for use of such property in the performance of this contract, or (ii) commencement of processing or use of such property in the performance of this contract, or (iii) reimbursement of the cost thereof by the Government, whichever first occurs. Property furnished by the Government and property purchased or furnished by the contractor, title to which vests in the Government under this section, are hereinafter referred to as "Government Property." Title to Government Property shall not be affected by the incorporation of the property into or the attachment of it to any property not owned by the Government, nor shall such Government Property, or any part thereof, be or become a fixture or lose its identity as personalty by reason of affixation to any realty. Title to the NYSERDA Property furnished to the Contractor pursuant to Section 10.2 above shall remain in NYSERDA."

Thus, title to all property purchased by petitioner for the Project passes directly from the vendor to the government and never passes to petitioner. The DOE requires Section 10.3 to be included in the Contract. Vendors and subcontractors are advised that title to supplies passes directly to the government and not to petitioner. The regulations applicable to M&O contracts require that the title passage provision be included in subcontracts.

The provision regarding title passing directly from the vendor to the government is not included in non-M&O contracts. In non-M&O contracts title passes after reimbursement is

made to the contractor, which can be 30 to 60 days after the property is received by the contractor.

The majority of the property purchased by petitioner under the Contract is delivered to the Project site in West Valley, New York. Some items purchased for the Project are first delivered to temporary warehouse space in Buffalo. In addition, on some rare occasions an item is delivered to another vendor for testing or incorporation into equipment that is then sent to the project site.

In making procurements for the Project, petitioner is required to follow the "Federal norm" described in 48 CFR 970.7103(b). The "Federal norm" rules do not apply to subcontracts of non-M&O contractors.

Similar to a direct Federal government procurement, procurements made by petitioner for the Project may be protested. In this regard, 48 CFR 970.7107(a) provides generally as follows:

> "The General Accounting Office (GAO) policies on protests state that GAO will consider subcontract-level protests when the subcontracts are 'by' or 'for' the Government. The term 'for' has generally been defined by the GAO as including acquisitions by management and operating (M&O) contractors."

In addition, with respect to procurements of automatic data processing equipment, the regulation provides as follows:

> "The General Services Board of Contract Appeals hears subcontract level protests involving the purchase of Automatic Data Processing Equipment (ADPE) . . . only in cases in which the prime contractor is acting as a purchasing agent for the Government. Should a protest be lodged against an M&O's purchase of ADPE, upon receiving notice of the protest, the cognizant DOE contracting officer shall promptly notify local counsel and the Office of Assistant General Counsel for Procurement and Finance, headquarters (AGCPF). The Department's position on such subcontract level protests shall be coordinated with the AGCPF. The contracting officer, promptly after receipt of a protest, and the decision(s) of the GSBCA, shall also furnish a copy thereof with related pertinent correspondence to the Business Clearance Division, Headquarters" (48 CFR 970.7107[g]).

Protests of subcontractor procurements under a DOE M&O contract, such as the Contract, are handled by the General Accounting Office. If a subcontractor for the Project were to protest a solicitation or award, the subcontractor could proceed as if it was dealing directly with a Federal agency, following the protest procedures applicable to bidders of government

contractors. This is a unique rule applicable to M&O contracts. The General Accounting Office will not take jurisdiction over protests of non-M&O subcontracts.

The DOE has to defend subcontractor protests under M&O contracts to the General Accounting Office. In such proceedings, the DOE contracting officer and the DOE counsel represent the DOE and the M&O contractor supports the contracting officer by providing information. The DOE contracting officer, and not the M&O contractor, controls the resolution of the matter with the General Accounting Office. If the contracting officer finds merit in the protest, he can direct the M&O contractor to take whatever remedial action needs to be taken to resolve the protest.

Section 9.1 of the Contract provides, in part:

> "Procurement arrangements under this contract shall be made in the name of the Contractor, shall not bind nor purport to bind the Government, shall not relieve the Contractor of any obligation under this contract (including, among other things, the obligation properly to supervise, administer, and coordinate the work of subcontractors) . . . ."

DOE is responsible for paying all allowable costs under the Contract and DOE approval is required for petitioner to sue to enforce a subcontract.

As an M&O contractor, petitioner is authorized and required to use the Federal government's sources of supply in making purchases of materials, supplies, equipment and non-personal services for the Project. Pursuant to a letter dated October 9, 1981 from Charles E. Williams, a DOE manager to Mr. R. C. Mairson, petitioner's (former) Project Manager ("October 9, 1981 letter"), petitioner was "authorized under [its] U.S. Department of Energy (DOE) Prime Contract No. DE-AC07-81NE44139, to act as agent for the DOE for the purpose of placing orders against Federal Supply Services Stores Depots and Government supply contracts . . . ." In addition, the letter authorizes petitioner to "Issue Tax Exemption Certificates in lieu of payment of state or other taxes for which the DOE is not liable." The letter recognizes that it establishes an "express agency relationship" in connection with petitioner's performance of the authorized functions referred to therein. Petitioner received similar authorization letters from the DOE dated July 17, 1991 and February 6, 1995. When petitioner uses a Federal

supply source, petitioner gives the source a copy of the letter as proof that it is entitled to use the source just like the Federal government. The letter is a formality which reminds petitioner to use Federal supply sources, which it is required to do, and introduces petitioner to such sources. Without the letter, a Federal supply source would not accept a purchase order from petitioner.

Although the Contract is a cost reimbursement contract, petitioner does not advance its own money to pay vendors and subcontractors for the Project before reimbursement by the DOE. Instead, purchases of property and services for the Project are paid for using checks drawn against the DOE's special bank account. Money deposited in the special bank account belongs to the Federal government. The Special Bank Account Agreement provides that the Government has title to the credit balance in the special bank account. Money is deposited in the special bank account as the bank draws on a letter of credit issued by the DOE in favor of the bank.

The letter of credit is a checks-paid type of letter of credit. The checks-paid letter of credit requires a special contract between the DOE, the contractor (in this case, petitioner) and the financial institution. No new checks-paid letters of credit can be issued by the DOE unless it first obtains prior approval from the Department of the Treasury. The balance in the special bank account is to be kept as close to zero as administratively possible and the DOE monitors each check-paid letter of credit account to ensure the account balances are minimized. Letters of credit are very seldom used for non-M&O contracts.

As noted, under the Contract title for property purchased for the project passes to the government. Petitioner does not own anything purchased with DOE funds under the Contract. Petitioner does not own any tangible property. Moreover, petitioner has not claimed any depreciation deductions on its Federal income tax returns because it does not own any depreciable property. Similarly, petitioner does not claim any research and development deductions or credits on its income tax returns since it is government money that is spent on such expenditures.

Petitioner is required to monitor the DOE's property at the Project site. Among other things, petitioner is required to affix a "U.S. GOVT. PROP. ID" bar code sticker on certain property when it is received at the Project site. Property costing $350.00 or more that is easily converted to personal use (sensitive property) and property costing over $5,000.00 (capital property) is so "tagged."

Sensitive property must be inventoried every year, capital property is inventoried every other year and the warehouse is inventoried on a perpetual basis. Office supplies and similar items must also be inventoried. The inventory information is reported to the DOE.

Petitioner is required to follow Federal government procedures to dispose of any property that is no longer needed at the Project. If property is no longer needed at the Project, it is made available to the entire DOE and entered onto the DOE's reportable excess automated property system. The property is included in a catalog and routed to DOE facilities for 30 days. If no one at the DOE needs the property, it is put on the General Services Administration's system and routed on its list for another 60 days. If the property is not picked up by a government agency from the inter-governmental excess property list, it is disposed of as the contracting officer or the DOE directs. Petitioner has negotiated an auction contract so that excess property from the Project that is not picked up from the list, once the DOE approves, is put out for auction and sold. Any money received from the sale of excess property from the Project is deposited in the special bank account for future Project use. If the excess property is donated to charity, petitioner does not claim a charitable deduction for it because it is government property. If property is acquired by petitioner from the DOE's or General Services Administration's excess property lists, only the transportation cost to get the item to the Project site is incurred by the DOE. This is because the property is already owned by the Federal government.

Petitioner cannot use DOE property for any purpose other than performing its obligations under the Contract. Petitioner cannot even use DOE property at the Project in

renegotiating the Contract when its term expires. Instead, petitioner, using Westinghouse money, rents separate space and equipment for such purpose.

Petitioner's employees also cannot use DOE property for their own personal purposes. Petitioner's employees are given instructions on the use of DOE property. Petitioner's Property Guide informs employees that:

> "Government property may only be used to perform official work of the United States Government. Here at WVNS this means work that is performed under our contract with the Department of Energy. Any loss, damage or destruction of this property is to be promptly reported to your immediate supervisor and Property Accounting. Personal use of government property is strictly prohibited."

For each item of sensitive property, petitioner's employee who is responsible for the item is required to sign a Custodial Agreement. In the Custodial Agreement, the employee acknowledges that the property "is the property of the U.S. Government." In addition, signs in the warehouse remind anyone entering that "All Material Stored in this Warehouse is Property of the U.S. Government And is for Government Use Only."

The use of the DOE's property by petitioner's employees is monitored by security and management. If it is discovered that an employee of petitioner is using DOE property inappropriately or is taking it from the Project without proper authorization, the employee can be subject to disciplinary action.

At the end of the Contract, petitioner and its employees can take from the Project site only items that belong to them personally, i.e., that they paid for with their own money. Everything else would stay.

An M&O contract creates a "special relationship" between the Government and the contractor, for which Government-owned or Government-controlled facilities must be used and for which the Government must maintain a special, close relationship with the contractors (see, 48 CFR 16.604). The Contract does not, however, describe petitioner as DOE's agent. There is nothing in DOE's files which describes petitioner as the agent of DOE, or which describes any other M&O contractor as DOE's agent. Nor do the applicable regulations describe M&O contractors as "fiduciaries" of DOE.

M&O contracts are the exception to the type of contracts the DOE generally awards. To enter into an M&O contract the DOE must have the approval of either the Secretary of Energy or the Under-Secretary or Deputy Secretary, which is not typical of the level of authorization for any other contract DOE enters into. The level of authorization is required for an M&O contract because of the close, ongoing relationship between the DOE and the M&O contractor.

VITRIFICATION AND PRETREATMENT

As noted above, a major purpose of the Project is "demonstrating solidification techniques which can be used for preparing high level radioactive waste for disposal" (Pub L 96-368, § 2[a]). Between April through June of 1983, the DOE determined that the high level waste at West Valley would be converted to a borosilicate glass form, through a process called vitrification. In the early 1980's the DOE had been investigating the vitrification process, but only in laboratories on a small scale basis. No full scale demonstration of the applicable vitrification process had been performed.

At that time the French, Belgians, British, Japanese and Soviets were also developing vitrification processes. Indeed, a large scale vitrification facility was in operation in France prior to the commencement of the West Valley Project. The French vitrification process could not be used in the United States, however, because of the differences in the manner in which France and the United States stored their wastes. In France, nuclear waste is stored in an acidic form in stainless steel tanks. There are no particles in the wastes, solids having been dissolved in nitric acid for storage. In the United States, nuclear waste is stored in a basic (i.e., with a pH greater than 7) or caustic state in carbon steel tanks. In the United States, the waste is a combination of a solid and a liquid stored in the same tank. The U.S.-type of waste could not be fed into the French vitrification process machines because the solid part of the waste would result in plugging, and would handicap operations. Therefore, it was necessary to develop a vitrification process and facility different from that used in France.

The DOE also has responsibility for two other sites that have nuclear waste similar to the waste located at the Project site. These two other sites are the Savannah River site in South

Carolina and the Hanford site in the State of Washington. The Project site has two tanks of high level nuclear waste. The Hanford site has 177 tanks and the Savannah River site has 51 tanks of high level nuclear waste.

In the early 1980's, bench scale developmental work on the vitrification process was being performed at the Pacific Northwest Laboratory at the Hanford site and in laboratories at the Savannah River site, using small furnaces (melters) and very small quantities (milliliters) of high level waste which were mixed with glass-forming chemicals to produce borosilicate glass. The glass was then analyzed for various properties, including leach resistance (i.e., how well the glass retains the radioactive material). However, no full scale testing or demonstration of the vitrification process had been performed. In fact, to the date of the hearing, vitrification has not been performed in the United States on a full scale basis using radioactive waste.

In this regard, the House of Representatives Science and Technology Committee's report on the Act states the following:

> "Existing federal regulations require that new, commercially reprocessed high-level liquid nuclear wastes be solidified for ultimate disposal within five years after production. Various solidification technologies and handling techniques have been under development for sometime to fulfill this requirement. However, technical information and first hand experience, which can only be obtained from data collected from the proper scaling of demonstration projects utilizing solidification technologies, is lacking and is necessary to provide an important link in the ultimate implementation of an overall national nuclear waste management program. The Committee believes that the technological base is adequate to proceed with such a scaled up demonstration of solidification, handling, and disposal techniques. . . . The West Valley project offers the next logical step in efforts to demonstrate existing technological capability in the nuclear waste area, as well as providing a valuable opportunity for additional research and development . . . . [T]he major benefit from this project will accrue to the Federal Government and the National Nuclear Waste Management Program through advancement of research and development of handling, processing, solidification, and decommissioning techniques for high level nuclear waste . . . ." (HR Rep No. 96-1100, 96th Cong, 2d Sess, Pt. 1, 7, 8, reprinted in 1980 US Code Cong & Admin News 3099, 3103.)

The views of DOE on the value of the West Valley Demonstration Project were also set forth in the Science and Technology Committee's report:

> "The proposed solidification project at West Valley would be of significant value to the national waste management program. It would demonstrate the removal, processing, and solidification of alkaline and acid high-level wastes in an integrated production scale plant. We have never demonstrated the solidification of alkaline high wastes on a significant scale. The acidic high-level wastes at West

Valley are derived from thorium fuel. We have little experience with such thorium wastes. We have demonstrated the solidification of acidic uranium based high-level waste on a limited scale but have not operated a production scale system for that purpose either. The operation of such an integrated demonstration provides valuable information that is not attainable either from small-scale or limited radioactive tests, or from full-scale "cold" tests.

"Specifically, the West Valley Solidification Program will provide valuable information to the national waste management program in a number of ways. A significant decontamination effort will be required including the removal of old equipment from the reprocessing plant so that the solidification project equipment can be installed. This initial decontamination of the plant and the disposition of the old equipment will give us more experience for future decontamination and decommissioning (D&D) activities.

"Second, the project includes the removal of the dense sludge layer from the bottom of the tank, and the D&D of the storage tanks. The West Valley tanks have a complex structure that will give us operational experience that is not attainable at our sites and may advance waste removal technology. The D&D of the tanks will represent the first cleanup and disposal of a high-level waste storage tank.

"Third, the project will demonstrate the operation of a full-scale solidification system. We have immobilized waste on a laboratory scale and have calcined Idaho's wastes for over seventeen years. Acidic waste from six commercial spent fuel assemblies has been vitrified. Mockups and small scale 'cold' and 'hot' process operations are being performed at several facilities; however, the West Valley program will represent the first fully integrated, sustained operation of a 'hot' high-level waste (HLW) solidification system. The West Valley project represents a logical next step towards the larger facility that we are planning for immobilizing the defense high-level wastes at Savannah River, and it may utilize one of the advanced waste forms we are developing as alternatives to borosilicate glass.

"Certain environmental analyses and the environmental impact statement for West Valley will be the first for a high-level waste solidification project and will be valuable for future projects.

"Finally, the project will demonstrate solidification of high-level wastes from the thorium fuel cycle. Such wastes has been solidified in the laboratory on a very small scale. A plant scale demonstration at West Valley would be a major advance.

"For budget purposes, our West Valley activities were classified as a remedial action pending a definition of the scope of DOE's involvement. The project definition has clearly shown that the project will have considerable value as a demonstration of high-level waste technology. We are, therefore, managing the project along with our technology and defense waste operating programs rather than as a remedial action, and will request any future authority under a separate category in the commercial waste management budget." (HR Rep No. 96-1100, 96th Cong, 2d Sess, pt. 1, 13, 14, reprinted in 1980 US Code Cong & Admin News 3099, 3109, 3110)

The report of the House Science and Technology Committee further states that:

"[t]he Committee intends this project to demonstrate technologies available for handling, processing, and solidifying high level liquid nuclear wastes as well as for

> decommissioning and decontamination on everything contaminated as a result of the solidification process towards the end of this project." (HR Rep No. 96-1100, 96th Cong, 2d Sess, pt. 1, 8 reprinted in 1980 US Code Cong & Admin News 3099, 3104.)

The House Committee on Interstate and Foreign Commerce also reported on the Act, prior to its passage, stating, in part:

> "This Committee recognizes that the program authorized under this bill has an important demonstration value, in that past high- level liquid radioactive waste activities have been confined to small scale projects. Consequently, a program of the magnitude of the West Valley project has significant demonstration implications, expanding the waste solidification program beyond its present research and development stage . . . .
>
> "However, the basis for this Committee's action in reporting this bill was primarily directed towards the health and safety implications posed by the storage of high-level radioactive waste in liquid form . . . . Consequently, this Committee views the project authorized by this legislation as essentially a remedial action program with substantial demonstration value . . . ." (HR Rep No. 96-1100, 96th Cong, 2d Sess, pt. 2, 15 reprinted in 1980 US Code Cong & Admin News 3099, 3122.)

Representatives of the General Accounting Office testified before the House Interstate and Foreign Commerce Committee at a hearing on the Act. The legislative history of the Act indicates that:

> "The GAO went on to state that 'In our view, the proposed project at West Valley should more logically be described as a remedial action program with some demonstration value than as a demonstration project where they have full Federal support. While dealing with West Valley's high-level liquid waste may help build public confidence of how commercial high-level liquid waste can be permanently disposed of, the technical demonstration benefits of this project are limited'." (HR Rep No. 96-1100, 96th Cong, 2d Sess, Pt. 2,7 reprinted in 1980 US Code Cong & Admin News 3099, 3114.)

Taking the vitrification process which as been performed only at laboratory scale to a full scale facility involves technical complexities, including maintaining the equipment so it has a sufficient service life and operating the equipment remotely. A full scale demonstration of the process and technologies is necessary to show not only that it can be done, but also to prove the methods by which it can be done. In addition, it is necessary to demonstrate that the waste form produced will meet the requirements for disposal at a Federal repository.

A facility in which the vitrification would take place at the Project was designed. Part of the design effort involved taking samples from the high-level radioactive waste tank at the

Project site. The samples were taken to identify the analytical makeup of the contents of the tank and to compare that to the borosilicate glass to be made. Petitioner spent considerable time testing the waste and developing the best chemical "recipe" to be used to produce the vitrified glass logs. It was determined that if all the waste in the tank was solidified in glass logs (2 feet in diameter and 10 feet long cylinders), 1500 to 1800 glass logs would be produced because of the chemical makeup, as opposed to the radioactivity, of the waste in the tank. Petitioner sought to develop and developed a pretreatment system for separating the chemical constituents of the tank from the radioactive material, which reduced to about 300 the number of glass logs to be produced. It was important to reduce the number of glass logs to minimize the disposal space required for them.

Although it contained only simulated waste, the first glass log was produced by petitioner in December 1984. Previously, a full-size, nonradioactive glass log was produced using the West Valley reference process by Pacific Northwest Laboratories in or about mid-1983.

The main waste tank (8D-2) at the Project site had 600,000 gallons of radioactive waste in it when petitioner arrived at the Project. To separate out the radioactivity (Cesium 137) from the waste in the pretreatment system, petitioner selected an ion exchange medium called zeolite. This use of zeolite had been previously demonstrated and tested on a small scale. Petitioner received considerable support from Pacific Northwest Laboratories in the tailoring of the zeolite for petitioner's use. Petitioner installed a pump in the main tank and process equipment, including ion exchange columns, in a spare tank (8D-1). The liquid in the main tank was run through the ion exchange columns containing zeolite in the spare tank. The zeolite removed Cesium 137 from the liquid waste. The waste from which the Cesium 137 had been removed then went through a liquid waste treatment system in which excess water was boiled off, resulting in a small volume of pretreated waste. After the pretreated waste had Cesium 137 removed, using zeolite in the ion exchange columns in the spare tank, and had gone through the liquid waste treatment system, the pretreated waste then went through a cement solidification

system in which it was mixed with cement and then fed to 71 gallon square drums which were transported to a drum storage building (the "drum cell") for storage.

The radioactive dose rate of the cement drums is much lower than the expected dose rate of the glass logs to be produced in the vitrification process. The radioactive dose rate from the glass logs is expected to be about 70,000 to 100,000 times higher than the dose rate from the cement drums.

Petitioner then performed a "sludge wash" on the waste in the main tank. Simply put, this involved mobilizing the sludge or mixing it up in the bottom of the tank, suspending it in water, running pumps installed in the tank and then shutting the pumps off. In the process, chemicals that had previously been precipitated in the sludge were more readily soluble in the liquid and some redissolved in the liquid. This liquid waste was then run through the pretreatment system and converted to cement form after Cesium 137 and excess water had been removed in the pretreatment system. The pretreatment system is operated remotely because the radiation level is too high for hands-on operation.

When petitioner completes the sludge washes, it will move the used zeolite, which is now in the bottom of the spare tank, to the main tank. Thus, the radioactivity that was removed in the pretreatment system will go back to the main tank to be fed with the remaining "washed" sludge into the vitrification process and made into glass logs.

The pretreatment system resulted in a number of new developments. First, a recipe had to be developed for the cement waste that would meet U.S. Nuclear Regulatory Commission ("NRC") requirements. Petitioner's cement recipe was the first that the NRC accepted for Type C cement. In addition, each time the chemistry of the feed stream of waste material changed, petitioner had to demonstrate again for the NRC that it had a suitable cement recipe for that particular feed stream. Part of NRC's review and acceptance of the cement involved petitioner's agreement to periodically test the cement for long-term radioactive and structural performance against NRC requirements.

A square drum was designed for storage of the cement so that the stored drums would take up less space than the normal round drums. Round drums take up more space because of the void space between them. Petitioner developed the square drum with the help of a commercial supplier.

The use of zeolite as an ion exchange material was advanced at the Project. Before its use at the Project, there had only been limited experience with zeolite. It had not been used in the size of the ion exchange columns that petitioner needed to use. Petitioner had been concerned whether the zeolite's decontamination factor, the gauge of the efficiency of the Cesium removal, would be present in a large scale use. Because of the Project's success with zeolite, the Savannah River site is looking at using ion exchange as a means of pretreatment in lieu of processes they had been considering.

The sludge mobilization process also resulted in a new development, modified pumps, which can be used in sludge mobilization. While petitioner utilized mixer pump designs obtained from the Savannah River facility, petitioner identified those designs for use at West Valley. The Savannah River site subsequently modified its pumps based on the Project's experience with sludge mobilization pumps.

With respect to the vitrification process, petitioner has performed and continues to perform, and has had and continues to have others perform, laboratory scale testing. In addition, a full scale prototype of the vitrification facility was constructed at the Project site. This involved the design, fabrication, purchase and installation of equipment. Petitioner's use of a full scale prototype after only laboratory scale testing differed from normal practice. Typically, testing is done on increasingly larger scales between laboratory scale and full scale testing. The full scale prototype facility was operated on a "hands-on" basis, without radioactive shielding. For a five-year nonradioactive test run, petitioner operated the prototype vitrification facility using a nonradioactive waste simulant to represent the high level radioactive waste. As part of this testing, petitioner added pieces to the system as each new component was built. This approach allowed petitioner to begin testing the system components

right away. After the five-year test, the equipment was removed and certain items were examined. For example, the slurry fed ceramic melter, the main piece of vitrification equipment, was destructively examined to evaluate its condition and determine the suitability of its design and materials for radioactive use.

The five-year nonradioactive test program demonstrated that the system and its components could work on a full scale basis, that the chemicals could be mixed and transferred from tank to tank without unwanted settling, and that the distributive control system could be used to control the facility. In addition, during the last 45 days of the 5-year nonradioactive vitrification test program, the system was operated remotely, which demonstrated that the system was capable of remote operation.

After the five-year test program, petitioner installed a one-twelfth scale melter (the "mini melter") which it is using for further nonradioactive testing of the actual process of glass production.

The radioactive vitrification operation at the Project, which has not begun, is expected to last for 30 months, or approximately one-half of the length of time of the five-year test operation. It is expected that vitrification of the nuclear waste at the Savannah River site will take 30 years and at the Hanford site will take 30 to 40 years. Neither the Savannah River site nor the Hanford site has begun radioactive operations.

Since the five-year test program was completed, petitioner has been converting the vitrification facility from nonradioactive to radioactive use. This includes installing walls, shielding, piping and piping penetrations, windows and equipment.

At the DOE's request, petitioner has prepared approximately 70 technical reports, with 30 more scheduled. The DOE pays for the cost of the reports. In addition, at the DOE's expense, petitioner's engineers and scientists present papers and give speeches to technical associations regarding the Project.

From the DOE's perspective, the Project is a research and development contract. Petitioner's fee for the Project depends, in part, upon the DOE's characterization of the type of

work performed. From the time petitioner began receiving an award fee and up until the late 1980's, the DOE classified the Project wholly as research and development. Beginning in the late 1980's, the DOE moved away from its 100 percent research and development classification to classifying the Project as 75 percent research and development and 25 percent production. The DOE considers the vitrification and cement solidification processes as research and development and considers site services, such as maintenance and janitorial services, as production. The award fee pool for the Project is reduced if the portion of the Project considered by the DOE to be research and development is decreased. Thus, the DOE pays a higher fee with respect to the percentage of the work that is classified as research and development.

After the high level radioactive waste at the Project site is solidified and all the requirements of the Act are fulfilled, the DOE is required to turn the site back to NYSERDA. The condition of the Project facilities at the time of surrender of the Project site at NYSERDA has not been determined, and will be the subject of an environmental impact statement before a final determination is made by the DOE. A number of alternatives for site closure will be considered. At one extreme is an alternative called the "no action alternative," which would mean the facility would remain forever as it is at the end of the Project activities. At the other extreme is an alternative which would involve removing everything from the site to allow unrestricted future use. This would include exhuming waste buried by NFS, demolishing buildings, decontaminating soil, etc. There are at least three alternatives between the two extremes under which, to varying degrees, the buildings at the site are cleaned up and the facilities constructed for the Project are removed.

Reliance on February 22, 1982 Letter

Petitioner received a letter dated February 22, 1982 (the "February 22, 1982 letter") from Arthur Proper of the Sales Tax Instructions and Interpretations Unit (the "Unit") of the Division of Taxation stating, in relevant part:

> "Your file requesting exemption from sales tax has been forwarded to us for review and comment.

> "Based on the information furnished in a letter dated October 9, 1981 by the Department of Energy Idaho Operation Office, it is considered that you may act as an agent in the performance of contract No. DE-AC07-81ME44139[sic].
>
> "As an agent for the federal government you may make purchases on their behalf. In order for the transaction to be exempt from sales tax, the billings must be billed to West Valley Nuclear Services Company, Inc. as agent for Department of Energy Idaho Operations Office. The payment for the purchases must be made from a special fund created for that purpose."

Neither petitioner nor the Division has any record of what was sent to the Division and what was reviewed by the Division which resulted in the issuance of the February 22, 1982 letter. The February 22, 1982 letter refers to a letter dated October 9, 1981, which is discussed herein at Finding of Fact "27".

Petitioner implemented the February 22, 1982 letter by sending a copy of the letter to all its vendors, implementing payment via the DOE's special bank account and the DOE checks-paid letter of credit, and including on its purchase order form that the purchase is made under a prime contract with the DOE and is exempt from sales tax.

During the audit period, petitioner relied on the February 22, 1982 letter and did not pay sales tax on purchases made under the contract. During the audit period, petitioner sent a copy of the February 22, 1982 letter to all its vendors and subcontractors.

After the February 22, 1982 letter petitioner corresponded with the Unit by a letter dated February 15, 1984 from G.E. Whitfield, one of petitioner's senior subcontract administrators, to Mr. A. Proper of the Unit. The letter from Mr. Whitfield states that it is submitted based on a telephone conversation on February 14, 1984, discusses the Project generally, and sales tax requirements of construction contractors (i.e., subcontractors) for the Project. Among other things, the letter notes that "[y]our letter of February 22, 1982, relative to WVNS tax exempt status (copy enclosed) is not applicable to the third party, the subject construction contractors." The Unit responded to the February 15, 1984 letter by a letter dated March 12, 1984 from Nora Knaggs of the Unit addressed to Mr. Whitfield, which states that it is in reply to the February 15, 1984 letter and discusses only purchases made by subcontractors.

On August 4, 1987, the Division's Technical Services Bureau received a petition for an advisory opinion from Butler Mechanical, Inc. An advisory opinion dated December 22, 1987 was issued in response to said petition (see, TSB-A-88[7]S). The advisory opinion states that Butler Mechanical, Inc. has a contract to perform services at the Project. The issue presented in the advisory opinion is whether Butler Mechanical, Inc. is "required to pay sales tax on equipment it rents when it performs a contract for the Federal government." The advisory opinion indicates that Butler Mechanical, Inc. submitted a copy of the Contract and a copy of the February 22, 1982 letter in support of its petition. In its petition Butler Mechanical, Inc. asserted that it was acting as an agent for the Federal government, and that, as such, the Federal government was the lessee of equipment used by Butler Mechanical, Inc. to perform services. The advisory opinion rejected this assertion of agency and also concluded that the February 22, 1982 letter wrongly determined that petitioner (i.e., WVNS) was an agent of the Federal government. The advisory opinion explicitly rescinded said letter and stated that Butler Mechanical, Inc. could not rely the letter.

On August 29, 1989, the Division's Technical Services Bureau received a petition for an advisory opinion from petitioner wherein petitioner raised the issues of whether it was an agent of the Federal government and whether, based on the February 22, 1982 letter, the Division was estopped from assessing any sales or use tax prior to January 31, 1989. The opinion indicates that petitioner submitted copies of the Contract and the February 22, 1982 letter to the Technical Services Bureau. In an advisory opinion dated February 7, 1990, the Technical Services Bureau rejected petitioner's assertion of agency status and further stated that the February 22, 1982 letter was erroneous and that petitioner may not rely on that letter (see, TSB-A-90[7]S).

Audit Results

The audit herein began with a meeting between representatives of petitioner and auditors of the Division of Taxation ("Division") on January 25, 1989. During the course of this meeting the Division's auditors advised petitioner's representatives of the Division's position

that it did not consider petitioner to be an agent of the Federal government. The auditors specifically advised petitioner's representatives of the advisory opinion issued to Butler Mechanical, Inc., dated December 22, 1987.

Following a computer-assisted statistical sampling audit of petitioner's books and records, the Division issued two notices of determination and demands for payment of sales and use taxes due dated March 13, 1991 (the "Notices"), asserting additional sales and use tax due in the aggregate amount of $4,547,448.18, plus interest, for the period December 1, 1985 through February 28, 1990. At the hearing, the Division conceded the portion of the tax set forth on the notices that was based on statistical sampling and not a detailed audit, reducing the amount of tax at issue to $2,694,167.37. Also at the hearing, petitioner conceded that $3,422.18 of tax is due with respect to items the costs of which were unallowable costs under the Contract and were paid out of petitioner's fee. Following the hearing, the Division conceded the nontaxability of three items (***see***, letter from Brian McCann, Esq., to the administrative law judge dated May 1, 1995). The total tax originally alleged to be due with respect to the three items conceded by the Division is $9,124.31. As a result of these concessions, the total tax remaining at issue in this matter is $2,681,620.88.

Following the hearing, petitioner submitted a schedule of purchases of property and services which the Division treated as taxable in the audit. Petitioner does not concede that these items are taxable, but has conceded that they do not qualify for the capital improvement or research and development exemptions from sales and use tax. The total tax alleged to be due with respect to such items is $516,170.80. At the hearing, petitioner submitted a schedule of the utilities transactions (i.e., telephone, natural gas and electricity) with respect to which the Division alleges tax is due. Pursuant to the Cooperative Agreement, the DOE is required to pay or cause to be paid all charges or expenses for such utilities. Total tax alleged to be due with respect to purchases of such utilities is $336,896.98.

The Project and the DOE have not set aside funds or budgeted for payment in the event this case is resolved in favor of the Division. Given the way the DOE budget process works, if

tax is ultimately determined to be due, the Project's budget would need to be replanned and either something planned would be delayed or just not done. If some aspect of the Project is delayed, e.g., either because petitioner has to delay purchases or lay off employees to cover the tax liability, petitioner's award fee may be reduced. An impact to the Project's schedule may have an indirect impact on petitioner's and Westinghouse's ability to successfully bid future work. Petitioner has had some experience in the past with not being within schedule and within budget. Petitioner was criticized and its award fee scores were lowered and its fee earned was reduced as a result. More recently, petitioner has stayed on or slightly ahead of schedule and on or slightly under budget and has been rewarded in the award fee process. Failure to continue to deliver on schedule and on or under budget may result in petitioner's being subjected to budget cuts. If, instead of relying on the February 22, 1982 letter, sales tax had been paid as items were purchased during the audit period, petitioner would have been better able to manage the effect of the tax on the Project's budget.

Specific Purchases Claimed by Petitioner to Result in Capital Improvements

Petitioner asserts that the following items were capital improvements, excluded and exempt from sales tax pursuant to Tax Law § 1105(c)(3)(iii) and § 1115(a)(15), or, alternatively, were tangible personal property exempt under Tax Law § 1115(a)(16):

a. Vitrification - Building Components (Ex. 41, pt. 5, P.O. Nos. 12753, 39620 and 30712). These purchase orders relate to the construction of building facilities for vitrification, including the construction and installation of three to four feet thick concrete columns, walls and roof (P.O. No. 12753), 3600 tons of crusher run limestone used for part of the building foundation (P.O. Nos. 39620) and a steel floor/pit cover (P.O. No. 30712).

b. Conveyor/cranes.

1. Drum Load Out Conveyor System (Ex. 45, second summary, pt. 2, P.O. Nos. 21740, 30697, 21148, 24063, 28423, 21342, 15210, 35534, 05838 and 22587). The square drums enter and leave the CSS system on a conveyor, roller system. The conveyor system is fairly light at the load end stage, when the drums are light and empty. After the drums have

been filled with cement, they weigh approximately 1,000 pounds each. The drum load out conveyor system is heavier than the load in system and consists of a series of conveyors, drive motors and roller systems that operate remotely from a control room. The drum load out conveyor system also includes heavy duty scales and monitoring systems for weighing and monitoring the drums. The drum load out conveyor system is attached to the structural steel of the building and is bolted and grouted into the building's concrete floor assembly. The drum load out conveyor system was specifically designed to function in the location in which it is located. The cement solidification system ("CSS"), which is part of the pretreatment system, could not operate without the conveyor, which is tightly packaged into a very small area.

2. Drum Cell Conveyor (Ex. 45, second summary, pt. 4, P.O. No. 24632). The drum cell conveyor is another conveyor/roller system. It is located in the drum cell where the cement-filled square drums are stored. The conveyor takes the drums from the square drum transport cask into the drum cell to the point where the drum cell crane can then reach the square drums. The conveyor system is in a tight shielded cell area. It was designed specifically to take two drums at a time, separate them, lay each on its side and set it in a diamond configuration so the drum cell crane can pick it up. The conveyor system is attached to the drum cell in a concrete shield wall area and is anchored to the concrete structure. The drum cell could not be used as intended without the conveyor.

3. Drum Cell Crane (Ex. 45, second summary, pt. 5, P.O. No. 21053). The drum cell crane is operated remotely in the drum cell. It picks up square drums from the drum cell conveyor, and moves and stations them inside the drum cell. The drum cell crane was designed for this specific use. Removal of the drum cell crane would require dismantling the building structure. The drum cell could not be used as intended without the drum cell crane.

c. Ventilation Systems.

1. Contact Size Reduction Facility Ventilation System (Ex. 47, pt. 1, P.O. Nos. 25680, 29695, 28679, 29915 and 21237). These purchase orders relate to the ventilation system in the contact size reduction facility, a facility used to volume reduce radioactive waste to

minimize the amount that needs to be stored. The ventilation system is used to control the airborne contamination by exhaust ventilation. The ventilation system is a high-efficiency air filtration bank of filters that removes airborne contamination from the air prior to releasing it into the environment through a stack and release point. The contact size reduction facility ventilation system is housed in its own separate building installed on top of another building. Removal of the ventilation system would require completely disassembling the building in which it is enclosed, and cutting free the welded supports that support the weight of the ventilation system on the roof.

2. STS Ventilation System, (Ex. 47, pt. 2, P.O. Nos. 25541 and 15264). These purchase orders relate to the ventilation system for the supernatant treatment system ("STS"), which is part of the pretreatment system. The ventilation system consists of filters in a welded housing and exhaust blowers. The STS ventilation system was installed while the building was under construction. The building was built over the top of the ventilation system, with concrete walls poured on each side to segregate the ventilation system from other pieces of equipment in the building. As a result, the ventilation system could not be removed without damaging the building. The building would need to be dismantled to remove the STS ventilation system. The STS ventilation system is attached to the building via stainless steel welded to supports in the floor of the building.

3. Temporary Ventilation System (Ex. 47, pt. 3, P.O. Nos. 12720 and 14571). In order to construct the STS system, a temporary ventilation system was necessary before the permanent STS ventilation system was installed. This temporary system was used during construction of the STS and has since been removed. It was necessary to install the temporary system before the permanent system was in place in order to have some ventilation system to prevent contamination from backing up during construction.

d. Environmental Monitoring Wells. (Ex. 47, second summary, P.O. Nos. 37777, 23387, 40327 and 21363). Environmental monitoring wells have been installed at the Project to monitor groundwater for environmental purposes. Each of the wells consists of a six-inch

casing that is drilled down to the appropriate depth for the well depending upon the location of the groundwater table. The ground is drilled and the casing, which is a piece of pipe, is set. Water samples are drawn out periodically for chemical and radioactivity analysis. The casings are not removed and their removal would damage them. If a monitoring well is taken out of service for any reason, it is plugged with concrete and made unusable. If the casing were removed, it would leave a hole in the ground.

e. Building/Structures.

1. Sprung Structure (Ex. 47, third summary, pt. 1, P.O. No. 13846). The sprung structure is a weather enclosure consisting of a metal frame with a soft-skinned exterior. It was installed over an area in which environmental monitoring wells had been installed so the wells could be monitored during the winter.

2. Hazardous Waste Storage Buildings (Ex. 47, third summary, pt. 2, P.O. No. 40865). There are four small hazardous storage buildings at the project site which are used to hold hazardous, as opposed to radioactive, waste. The buildings are "heavy duty", explosive-proof and fire protective. They are on concrete foundations and have electricity running to them through an underground conduit. Each building is anchored down to anchors set in the concrete foundation.

3. Lag Storage Building (Ex. 47, third summary, pt. 3, P.O. No. 23676). The lag storage building is a weather structure in which low level radioactive waste is stored. It is similar to the sprung structure, but considerably larger and is anchored to the ground over a gravel base foundation.

4. CSRF Ventilation Building (Ex. 47, third summary, pt. 4, P.O. No. 26735). The contact size reduction facility ventilation building houses the contact size reduction facility ventilation system. This building is attached to the roof of the process building.

5. VIT Glass Lab Room (Ex. 47, third summary, pt. 5, P.O. Nos. 24375 and 12689). The VIT glass lab is a small test laboratory in which radioactive glass waste form testing is performed. The lab itself was a prefabricated structure that was installed and then the building

was built, or closed in, around it. Essentially, the room was a modular office building brought in in pieces and installed. However, it was then enclosed within new walls that separated it from the original building into which it was installed. Removing the VIT glass lab room, would involve its disassembly and tearing down walls in the building. It is attached to the walls and floor via a concrete foundation, metal, studs and drywall.

6. Sprung Structure Storage Building (Ex. 47, third summary, pt. 6, P.O. No. 22497). The sprung structure storage building is a weather enclosure for radioactive waste storage. It is a metal structure over which a fabric skin is stretched. It has a joint in the middle, so that it can be pulled apart and runs on tracks in the ground to open and close. The tracks are anchored into the ground.

7. Temporary Air Lock (Ex. 47, third summary, pt. 7, P.O. No. 12702). The temporary air lock was a wood frame with a plywood exterior. It was anchored to the building with expansion anchors and was put in temporarily to provide access to a cell, access to which was necessary for the CSS. The temporary air lock was installed as a temporary but necessary measure to provide access to the cell before a permanent air lock could be installed.

f. Miscellaneous Audit Exception Items.

1. Boiler Upgrades (Ex. 47, fourth summary, pt. 1, P.O. Nos. 27746, 20506 and 25185). These purchase orders relate to the replacement of the boiler control system and boiler feed water pumps for the Project. As part of the upgrades, the piping for the old pumps had to be removed with new piping installed as well as new concrete pads poured for the pumps. Each pump sits on a large concrete foundation and is cemented in place to prevent vibration or misalignment of the pump. The boiler upgrades could not be removed without damaging them.

2. Main Plant Air Compressor (Ex. 47, fourth summary, pt. 2, P.O. No. 38221). This purchase order is for the purchase and installation of a new air compressor for the Project. The air compressor has a large concrete base underneath to which it is cemented in place. The air compressor could not be removed without damaging it.

3. Lab Sinks and Cabinets (Ex. 47, fourth summary, pt. 3, P.O. Nos. 37984 and 37209). These purchase orders relate to the installation of industrial grade cabinets and sinks in laboratories. They are bolted to the wall and to the floor and the sink is attached to plumbing facilities.

4. Sewage Treatment Plant Upgrades (Ex. 47, fourth summary, pt. 4, P.O. Nos. 22043, 37744 and 36076). As the number of workers at the Project has increased, the waste water treatment handling facilities at the Project have had to keep pace with a growing population. As a result, upgrades and size increases have been made to the sewage treatment plant to keep up with the growing population. These purchase orders relate to the installation of aboveground and inground sewage tanks to handle increased capacity. The inground tank could not be removed without damaging the sewage treatment plant and leaving a hole in the ground. The aboveground sewage tank is necessary to run the facility and could not be removed without dismantling the building in which it is housed.

5. Chemical Feed System (Ex. 47, fourth summary, pt. 6, P.O. No. 14730). The chemical feed system is used in the water clarification process for the Project. The system's tanks are anchored to concrete foundations and pumps are bolted to a steel structure and piping systems that run overhead. Removal of the chemical feed system is possible; however, it would be impossible to operate the raw water clarifier and have water for use at the Project without them.

6. Supercompactor and Supercompactor Enclosure (Ex. 47, fourth summary, pt. 7, P.O. Nos. 22359 and 27543). The supercompactor is used to crush 55 gallon drums of radioactive waste in order to reduce the volume of the waste. The supercompactor is installed inside a weather enclosure that is attached to the side of a building. The supercompactor could not be removed without damaging the enclosure. If the supercompactor and its enclosure were removed, there would be a hole in the side of the building.

7. Repair Door Closer (Ex. 47, fourth summary, pt. 8, P.O. No. 24987). This is a purchase order for the service of repairing a door closer on the main entrance doorway of the process plant.

8. Drain Piping (Ex. 47, fourth summary, pt. 9, P.O. No. 43236). This purchase order relates to a drain system that was installed for storm water runoff around a low level radioactive waste holding lagoon. It is installed in the ground in a trench around the lagoon and is set in gravel so that the water gets into the gravel and then goes into the drain pipe and down the ditch. If the piping were removed, the drainage ability would be damaged and there would be a hole in the ground.

9. Electric Wire to NYS Burial Ground (SDA) (Ex. 47, fourth summary, pt. 10, P.O. No. 39124). This purchase order is for electric wire that was purchased for providing power to a building in the New York State disposal area which is not within the Project boundaries. The wire was installed above ground. If the wire were removed, there would be no electric service to the New York State disposal area.

10. Damper (Ex. 47, fourth summary, pt. 11, P.O. No. 37344). This purchase order is for a damper, which is a valve for the ventilation system in the master slave manipulator repair shop and it is used to control the amount of ventilation out of the shop. It is bolted into the ventilation system and regulates the amount of exhaust air flow out of the area.

11. Tubing (Ex. 47, fourth summary, pt. 12, P.O. No. 24912). This purchase order is for tubing fittings for ventilation instrumentation necessary for the operation of instrumentation associated with the ventilation system.

12. Valve (Ex. 47, fourth summary, pt. 13, P.O. No. 34949). This purchase order is for hand valves for a steam turbine. The valves are installed in a turbine casing and regulate the amount of steam. The valves are necessary to operate the turbine. The turbine drives a backup piece of safety equipment and without the hand valve could not be operated.

13. Carbon Steel Plate (Ex. 47. fourth summary, pt. 14, P.O. No. 43642). The carbon steel plate is a piece of steel shielding that was installed for shielding a personnel contamination

monitor in an area with background radiation. The plate was bolted to the walls and ceiling around the personnel contamination monitor, which could not be used if the plate were removed.

14. Lads Booth (Ex. 47, fourth summary, pt. 15, P.O. No. 18310). The lads booth is a liquid abrasive decontamination system. It is a small glove box used for decontaminating small pieces of equipment, hand tools and hardware. The booth is made of stainless steel and is welded to steel structural supports in the building in which it is housed.

15. Door Upgrade (Ex. 47, fourth summary, Pt. 16, P.O. No. 25926). This purchase order relates to parts that were purchased to upgrade a shield door drive mechanism that is in a process mechanical cell in order to put the door back into service.

16. Metal Cover (Ex. 47, fourth summary, pt. 17, P.O. No. 28436). The metal cover is a steel box which covers pipe stubs from the STS. It also covers a hole in the wall so that if it were removed, there would be a hole in the building, as well as a loss of contamination control from the building.

17. FRS Filter and Piping Systems (Ex. 47, fourth summary, pt. 18, P.O. No. 13832). This purchase order is for a filtration system used in the nuclear fuel storage pool which replaced an older filtration system. It is used to maintain the clarity of the water.

18. Warehouse Restrooms Renovation (Ex. 47, fourth summary, pt. 19, P.O. No. 20521). This purchase order is for renovating and replacing components of a restroom.

19. Locker Room Renovation (Ex. 47, fourth summary, pt. 20, P.O. No. 12723). This purchase order relates to the renovation of the locker room facility to accommodate more employees. The renovation included relocating walls to enlarge the locker room facility and installing additional lockers and shower facilities.

Research and Development

Petitioner asserts that the following items are exempt from sales and use taxes pursuant to section 1115(a)(10) of the Tax Law:

a. Equipment and Materials Used in the Five-Year Full Scale

Vitrification Testing Program

1. Concentrator Feed Makeup Tank (Ex. 41, pt. 1 - Tanks, P.O. Nos. 17985 and 30659).

2. Cold Chemical Tank (Ex. 41, pt. 1 - Tanks, P.O. No. 12700).

3. Insulation of Cold Chemical System Tank (Ex. 41, Pt. 1 - Tanks, P.O. No. 30358). It should be noted that this item is also being used for testing with the mini melter.

4. Grinder (used to prepare laboratory simulations of feed material) (Ex. 41, pt. 1 - Tanks, P.O. No. 33764).

5. Vacuum Action Pneumatic Conveying System (Ex. 41, pt. 1 - Tanks, P.O. Nos. 32600 and 38053).

6. Fifty-Foot Flat Tape Device (Ex. 41, pt. 1 - Tanks, P.O. No. 35950).

7. Stainless Steel Portable Tanks (Ex. 41, pt. 1 - Tanks, P.O. No. 42421).

8. Distributive Control System (Ex. 41, pt. 2 - VIT Test Control System, P.O. Nos. 05839, 05836, 22586, 34169, 21681, 24462, 33392, 37048, 21827, 36876, 38140, 39622, 05254, 10284, 17001,22209, 22788, 39623, 15471 and 23615). This item is also being used for testing with the mini melter.

9. Miscellaneous Equipment Used in the Five-Year Testing Program (Ex. 41, pt.3 - VIT Testing Mechanical Equipment and Devices, P.O. Nos. 17960, 35233, 41416, 30871, 22234, 15868, 13516, 17025, 22207, 30327 and 20869). Some of these items may have been reused in the mini melter facility.

10. Temporary Access Platforms (Ex. 41, pt. 5 - Building Components, P.O. No. 32065)

11. Condenser and Support Platform (Ex. 41, pt. 5 - Building Components, P.O. No. 12648).

12. Slurry Sample Station (Ex. 41, pt. 6 - Slurry Sample Station, P.O. Nos. 35207, 31410 and 28826). This item will also be used in radioactive operations.

13. Melter-Related Equipment (used in five-year full scale testing and/or mini melter) (Ex. 41, pt. 8 - Melter-Related Equipment, P.O. Nos. 15290, 20884, 34133, 35432, 28686, 31168 and 35211).

14. Off Gas Line and Mist Eliminator (Ex. 41, pt. 9 - VIT Ventilation System, P.O. Nos. 12666 and 27580).

15. VAX (Ex. 40, pt. 1 - VAX and VAX Upgrades, P.O. Nos. 17962, 34163, 22490, 22585, 40996, 22612, 39457 and 20968). The VAX is a computer which supported the five-year testing program by receiving and performing analyses of the data generated.

16. Thickness Gauge (Ex. 40, pt. 6 - Thickness Gauge, P.O. No. 40742).

17. Vitrification Testing Chemicals, Simulants, Gases and Glass (Ex. 40, second summary pt. 1 - VIT Testing Chemicals, Simulants, Gases and Glass, P.O. Nos. 20218, 23093, 27641, 28284, 31124, 32498, 34845, 37899, 15611, 36975 and 35606). These consist of glass forming chemicals, waste simulants and frit glass that were fed through the melter during the five-year test program while testing glass recipes and various waste simulants.

18. Prototype Canisters (Ex. 40, second summary pt. 2 - Prototype Canisters, P.O. Nos. 12202, 20866, 32861 and 34014). The prototype canisters were all filled with glass in the five-year nonradioactive testing program. Petitioner also performed tests, such as drop tests, on the canisters after they were filled with glass. One of the purchase orders (P.O. 34014) is for three evacuated canister test models for use in emptying the melter if a failure occurs.

19. Corrosion Coupons (Ex. 40, second summary pt. 3 - Corrosion Coupons, P.O. No. 14811). Corrosion coupons were used early in the five-year, full scale testing program. The metal corrosion coupons were lowered into the molten glass in the melter to test the corrosivity of the molten glass with the particular metal.

b. Mini Melter

In 1989, a mini melter was constructed and installed in the same facility where the five-year testing program was being conducted. The mini melter was and is used for nonradioactive testing of variations in the glass recipe. The mini melter is used to look at the effects of minor

alterations in the waste constituents or the glass forming chemicals being supplied, and variations in the manner in which the chemical and physical conditions in the melter are controlled. The mini melter has and will be used exclusively for research of glass mixtures. (Ex. 40, pt. 3 - Scale Model VIT Melter, P.O. Nos. 34050, 36924 and 39196).

Petitioner used 30 gallon stainless steel drums to hold the glass from the mini melter, instead of the canisters used in the five-year full scale testing program. (Ex. 40, second summary pt. 2 - Prototype Canisters, P.O. No. 40219).

c. Miscellaneous VIT Laboratory Equipment

The VIT lab at the Project site is used to perform some of the detailed analysis of the glass waste form, such as crystalline structure and the effects of processing changes on the structure of the glass. The performance of the glass is important in terms of both the repository and establishing conditions for storing the glass before it is shipped to the repository. The VIT lab is used to perform tests on nonradioactive small size samples and is not used to perform tests on radioactive glass. The following items, which the Division has treated as subject to tax, are used by or in the VIT Lab:

1. Microscopes (Ex. 40, pt. 7A, P.O. Nos. 17961, 23452 and 21423).
2. Crucibles (Ex. 40, pt. 7B, P.O. No. 17044).
3. Ceramic Metalograph (Ex. 40, pt. 7C, P.O. No. 17918).
4. Lab Hood (Ex. 40, pt. 7D, P.O. No. 17939).
5. Tube Furnace and Insulation (Ex. 40, pt. 7E, P.O. Nos. 20108 and 21695).
6. Image Analyzer (Ex. 40, pt. 7F, P.O. No. 21875).
7. Differential Thermal Analysis System (Ex. 40, pt. 7G, P.O. No. 22033).
8. Dispenser/Grinder (Ex. 40, pt. 7H, P.O. No. 22111).
9. Furnace Thermocouples (Ex. 40, pt. 7I, P.O. No. 32491).
10. Sample Bottles (Ex. 40, pt. 7K, P.O. No. 21776).

d. Laboratory Equipment

The following items are laboratory equipment used in different labs at the project site:

1. Total Organic and Inorganic Analyzer (Ex. 48, pt. 1A, P.O. No. 37952). This item measures the carbon content in a given sample. The analyzer is being used to measure the carbon content of vitrification samples from the mini melter.

2. Total Organic Carbon Analyzer (Ex. 48, pt. 1B, P.O. No. 27701). This analyzer was used for testing the carbon content of vitrification samples from the five-year full scale testing program.

3. Buck Atomic Absorption Spectrophotometer (Ex. 48, pt. 1C, P.O. No. 37444). This instrument is used to measure the chemical composition of a sample. The instrument was used sparingly to measure samples during the five-year, full scale testing program and is currently used with mini melter samples and for a small subset of samples that measure the iron content in water in the pretreatment system.

4. Upgrade Atomic Absorption Unit (Ex. 48, pt. 1D, P.O. No. 41388). This instrument measures the iron or potassium in a nonradioactive sample. Throughout the audit period, 50 to 60 percent of the use of this instrument was for vitrification samples; now the percentage is well over 70 to 80 percent.

5. Spectroanalyzer (Ex. 48, pt. 1E, P.O. No. 39413). This instrument was purchased but not used during the audit period. Since then, it has been used to determine the composition of samples taken from the pretreatment system and for laboratory simulations of the pretreatment process. The instrument will also be used in the radioactive vitrification process.

6. Scanning Spectrophotometer (Ex. 48, pt. 1F, P.O. No. 33024). This instrument is used to measure the amount of iron in the glass after vitrification. The instrument was used solely in the five-year, full scale testing program.

7. Alpha/Beta Counting System (Ex. 48, pt. 1G, P.O. No. 21826). This instrument measures the alpha and beta radiation content of a sample. It was used almost exclusively on pretreatment process samples.

8. Digital Pressure Indicator (Ex. 48, pt. 1H, P.O. No. 43322). Petitioner makes verification cubes of cement made in the pretreatment systems in the laboratory and crushes the cubes. Pressure indicators are used to measure the pressure when a cube is crushed.

9. Titrators (Ex. 48, pt. 1I, P.O. No. 20665). Titrators are small laboratory tools used to add a known amount of acid or caustic to a sample. The titrators were used in the vitrification and pretreatment processes.

10. Conductivity Meters (Ex. 48, pt. 1J, P.O. No. 20743). Petitioner uses the conductivity meters to make sure that the water used to dilute samples in the laboratory is pure so as not to bias the results of tests performed on the vitrification and pretreatment samples.

11. Osmosis System (Ex. 48, pt. 2A, P.O. No. 34940). This system was used to purify water in the laboratory to support vitrification and pretreatment analyses.

12. Water Distillation System (Ex. 48, pt. 2B, P.O. No. 25094). This item was a backup to the osmosis system and was also used to purify water for vitrification and pretreatment samples.

13. Microwave Unit (Ex. 48, pt. 2C, P.O. No. 15632). This microwave oven was used to heat samples in acid to dissolve solids in samples. This was used for vitrification testing.

14. Components of Cell Density Control Panel (Ex. 48, pt. 2E, P.O. No. 23233). The density of radioactive solutions in the pretreatment system is measured remotely using a cell density control panel located outside a radioactive cell.

15. Flasks, Beakers and Funnels (Ex. 48, pt. 3A, P.O. Nos. 31866, 33207, 38131 and 41495). These items are used to handle samples in the laboratory. The flasks, funnels and beakers were used almost exclusively to support vitrification and pretreatment testing of samples.

16. pH Electrode (Ex. 48, pt. 3B, P.O. No. 26904). This instrument is used to measure the pH of a sample. Petitioner's pH electrodes were used almost exclusively on vitrification and pretreatment samples.

e. Pretreatment Chemicals

1. Chemicals for STS (Ex. 44, pt. 11, P.O. Nos. 22107 and 28985). These purchase orders relate to chemicals which are used in the STS ion exchange process. Primarily, this consists of zeolite. This section also includes other chemicals (P.O. No. 28985) which have been used to simulate the waste for preliminary testing of the ion exchange columns. The simulate chemicals were used for nonradioactive testing of ion exchange media.

2. Chemicals for LWTS (Ex. 45, pt. 8, P.O. Nos. 37618, 20802 and 21738). These purchase orders are for chemicals that are used in the liquid waste treatment system ("LWTS"), which is a part of the pretreatment system. Resins are added to the vessels for ion exchange processing. In addition, sodium silicate is added to prevent foaming in the high-shear mixers of the CSS.

3. LWTS Waste Simulant (Ex. 45, pt. 9, P.O. No. 15245). This simulant was used for nonradioactive "cold" testing before radioactive operation of the pretreatment system.

f. Square Drums and Drum Handling Equipment.

1. Square Drums (Ex. 45, second summary, pt. 1, P.O. No. 21682). Square drums were developed for the Project for the purpose of holding the cement waste form. Square drums had never been used for radioactive waste storage before their development for use at the project.

2. Shielded Drum Transport Cask and Square Drum Lifter (Ex. 45, second summary, pt. 3, P.O. Nos. 24364 and 35156). The shielded drum transport cask is attached to a truck and is used to move the square drums from the drum load out conveyor system to the drum cell. The square drum lifter is attached to a forklift and is used for moving the square drums.

g. Supernatent Treatment System

1. Scale Model Ion Exchange Column (Ex. 44, pt. 4, P.O. No. 12634). A scale model, clear plastic ion exchange column was used to test the ion exchange media chosen for use in the STS.

2. Master Slave Manipulators (Ex. 44, pt. 7, P.O. Nos. 28896, 30569, 35369 and 16494). Master slave manipulators are used to operate remotely radioactive systems that cannot be handled directly by the persons operating them. A worker stands in an area called an operating aisle and manipulates the gripper arm of the master slave manipulator on the operator side of a shield wall. The robot arm of the manipulator, which is on the other side of the shield wall, moves based on the operator's movement of the gripper arm. A master slave manipulator is used to operate valves and instruments which run the STS system. In addition, master slave manipulators are used for laboratory activities such as picking up beakers and taking samples. The STS system could not be run without the master slave manipulators because individuals cannot operate the valves directly on a hands-on basis. Similarly, when master slave manipulators are used in the labs, they are used to take radioactive samples and manipulate them where the laboratory personnel could not do this directly.

h. Miscellaneous Items.

1. Sludge Samplers (Ex. 40, pt. 2, P.O. Nos. 34481, 36161 and 41394). The sludge samplers were used to extract samples of the sludge so that chemical and radioactive analyses could be performed to better characterize the sludge which will be the feed material for vitrification of the radioactive waste.

2. VIT Computers (Ex. 40, pt. 4, P.O. Nos. 14836, 42384, 36191, 33689 and 40665). The VIT computers were used to perform design and development work with respect to the vitrification facility. For example, the items included on P.O. No. 14836 were used in connection with a design program used to design removable piping sections for the radioactive vitrification operations. Another purchase order (P.O. No. 42384) is for equipment for computer aided drafting used for performing design support for the vitrification facility. Other purchase orders were for computers used by design engineering for the vitrification facility (P.O. No. 36191), vitrification test engineering (P.O. No. 33689) and process development -- the engineers responsible for the glass recipe and related development work (P.O. No. 40665).

3. Scanning Calorimeter (Ex. 40, pt. 5, P.O. No. 17298), which is used to measure the heat given off by an object. This item was delivered to Alfred University and is used there as part of the research and development work Alfred provides for the Project on the glass.

4. Video Inspection System (Ex. 40, pt. 8, P.O. Nos. 39840 and 24269). One purchase order (P.O. No. 39840) is for a closed circuit television camera unit for the vitrification facility which was tested in the vitrification test facility over a nine-month period. The other purchase order (P.O. No. 24269) is for a camera used to do an internal inspection of a tank in the off gas system.

5. Abrasive Cutting System (Ex. 41, pt. 7, P.O. Nos. 25645, 37386 and 26661 and Ex. 45, pt. 1, P.O. No. 16539). The abrasive cutting system is a high pressure water and frit sprayer. It was developed for the DOE by a small business and implemented at the Project. The spray can be controlled to give a very fine cut. The system was used to cut a cement wall, only a portion of which was radioactive, to reduce the amount of radioactive debris material resulting from cutting through concrete necessary to modify an existing building at the Project site. The abrasive cutting system has also been used as a high pressure cleaning system to remove the cement buildup inside the high shear mixers used in the cement solidification system.

6. Chemicals for Low Level Waste Treatment System (Ex. 47, fourth summary, pt. 21, P.O. Nos. 36275, 37168, 08361, 37177, 39730 and 40959). The Project produces approximately 12 million gallons of low level liquid waste per year. The chemicals in this category are used in the ion exchange treatment of this low level radioactive waste so that it can be released into the environment below regulatory guidelines for radioactive nuclear content. The low level waste treatment facility is used as a test bed for new resins on the market. For example, the Project was the first facility to ever try the chemical associated with purchase order number 40959.

Capital Improvement and Research and Development

Petitioner asserts that the following items, which the Division has treated as subject to tax, are exempt from sales and use taxes pursuant to both the capital improvement and research and development exemptions:

a. Vitrification Facility

1. Cold Chemical Tanks (Ex. 41, pt. 1 - Tanks, P.O. No. 27485), which are installed in the cold chemical facility for use in the radioactive vitrification operations. The tanks are necessary for the vitrification process because they will hold the nonradioactive (i.e., "cold") chemicals to be used in vitrification. The tanks are bolted or cemented in place, and surrounded by structural steel for support. Equipment and piping, including a feed system, is welded to each tank and the feed system is permanently mounted to the building. The building has been constructed around the tanks. The tanks cannot be removed without destroying the building.

2. Vitrification Process Cell Crane (Ex. 41, pt. 4 - VIT Process Cell Crane, P.O. No. 20504). This purchase order is for two cranes for radioactive service in the vitrification facility. One crane has a 25-ton capacity and the other has a 4½-ton capacity. The crane moves via wheels at the end of the crane's gantry beam which roll on steel beams/rails that are embedded in the wall of the building. The rails are not removable. Moreover, the crane cannot be removed without damaging it. The cranes will be used to move the canisters during radioactive vitrification operations.

3. Vitrification Ventilation Systems (Ex. 41, pt. 9 - VIT Ventilation Systems, P.O. Nos. 35661 and 36250). One purchase order (P.O. No. 35661) is for in-cell off-gas equipment that is part of the off-gas treatment system located within the radioactive shielded sealed cell. The equipment, including condensers, mist eliminators, preheaters and ultra high efficiency filters, is welded to embedments that are formed as part of the floor of the cell and cannot be removed without damaging them. The equipment will be used to process and filter gases that are drawn from the vitrification process vessels and melter during radioactive vitrification. Purchase order number 36250 is for high efficiency particulate absolute ("HEPA") filter units. The primary HEPA units are located inside the radioactive cell and the secondary units are

located outside the cell, with air flowing from outside (nonradioactive) to inside the radioactive cell. The HEPA units are welded into place.

4. Transfer Assembly (Ex. 48, pt. 2D, P.O. No. 26458). The transfer assembly is a stainless steel box with ports that contain plastic coated grabber assemblies and is used to remove radioactive samples remotely. The transfer assembly is bolted to the wall on the outside of a radioactive cell and covers a hole in the wall. If the transfer assembly were removed, there would be a hole in the wall which would have to be sealed to prevent radioactive contamination.

b. Pretreatment System

As noted previously the pretreatment system consists of the supernatant treatment system ("STS"), liquid waste treatment system ("LWTS") and cement solidification system ("CSS"). The purpose of the pretreatment system is to reduce the amount of waste to be vitrified, thereby reducing the number of glass logs to be made and eventually stored in the repository. It is petitioner's position that the pretreatment system equipment is exempt from sales and use taxes pursuant to section 1115(a)(10) of the Tax Law. In addition petitioner asserts that the following items included in the pretreatment system are exempt from sales and use taxes because they are capital improvements:

1. Supernatant Treatment System ("STS")

A. Construction and Installation of STS (Ex. 44, pt. 1, P.O. Nos. 24172, 28634, 25913, 10277, 26709, 28635, 26600, 31527 and 30496). These purchase orders are for equipment and construction services for the installation of the STS, such as mechanical and electrical support near the completion of the STS system construction.

B. Pumps (Ex. 44, pt. 2, P.O. Nos. 17984, 20112, 27674, 20080, 30254, 33233, 15604, 25500, 27051, 27083, 37613 and 38826). Pumps are used in the STS to move water and liquid throughout the system. Purchase order No. 20080 is for ten long-shafted centrifugal mobilization pumps which were installed vertically down into the underground high level waste tank to mobilize or mix the contents of the tank or pump material out of the tank and into the

STS system (i.e., the ion exchange columns in the spare tank). These pumps have flanges at the upper end of a long shaft, which are bolted to stainless steel in the tank riser at the top of the tank. The pumps cannot be removed without damaging them and none of the pumps have been removed at the Project. Other pumps are installed throughout the STS for moving water through the system. Purchase order 33233 is for a weather enclosure over a mobilization pump. The enclosure would have to be cut up to remove it.

C. Tank Risers (Ex. 44, pt. 3, P.O. Nos. 17983 and 21944). Tank risers are used to access the underground high level waste tank and the spare tank. A tank riser is a large (30-inch) diameter pipe which is installed underground and attached to the top of the tanks. A piece of equipment, such as a mobilization pump, is installed in the tank through a tank riser. Each tank riser is welded to the top of a waste tank underground. Removal of a tank riser would require cutting it free of the waste tank, cutting it up while pulling it out of the ground (similar to removal of a well), and would leave a hole in the ground. No tank risers have been removed at the Project site.

D. Ion Exchange Columns (Ex. 44, pt. 4, P.O. Nos. 12634, 14554, 43362 and 36067). The ion exchange columns are installed into the spare underground waste tank. The ion exchange columns are welded to steel support structures which are welded to another steel structure installed above the tank, the intent being to not put the weight of the columns on the tank itself. The ion exchange columns are also welded to piping that goes to and from the columns and carry water through the STS system. An ion exchange column could not be removed without damaging it, the tank to which it is attached or the piping attached to the column.

E. Tanks (Ex. 44, pt. 5, P.O. Nos. 11782, 17275, 34674, 15672, 15999, 34570 and 34614). This category includes tanks, vessels and support equipment necessary to operate the ion exchange columns of the STS. The tanks are installed in the same manner as the ion exchange columns (i.e., they are welded to the steel structure that supports an ion exchange column). Similar to the removal of an ion exchange column, the tanks cannot be removed

without damaging them. One of the purchase orders in this section (P.O. No. 34674) is for a remote arm assembly used to access the bottom of the ion exchange column down in the waste tank. The arm is installed on a long steel beam supported over a welded structure at the top of the tank riser. The arm cannot be removed from the tank without cutting it into pieces.

F. Shield Walls and Piping (Ex. 44, pt. 6, P.O. Nos. 15670, 12708, 28297, 17293, 17941, 18433, 18434, 17213, 21530, 31660, 31230, 29733 and 31291). Shield walls are installed in the STS system between the radioactively contaminated valve aisle and the operator aisle to protect personnel from radiation exposure associated with the valve aisle. The shield walls include shielded windows through which the operators can see valves and instrumentation they need to operate remotely using master slave manipulators. There is also a shield wall behind the valve aisle. This shield wall is a two-part unit with stainless steel on each side and a cavity in between into which concrete is poured once the shield wall is put in place. The piping that makes up the STS runs from tanks and vessels in the ion exchange column in the spare waste tank, through a vault area and to the valve aisle, and passes through the concrete shield wall. Items in this section also include instrument racks into which piping and tubing runs and which is a part of the controls of the STS system.

G. Control Panel (Ex. 44, pt. 8, P.O. Nos. 20134, 33378 and 38107). The STS is a centrally-monitored system which is operated in part through a control room in which control panels are installed. Wiring from parts of the system come into and go out of the panel. The back of the panel is a walk-in room from which instruments and wiring can be accessed. The main STS control panel cannot be removed without damaging the building in which it is housed because the control panel was set in place and then a room was built around the control panel. The control panel could be removed without damaging it only if the building around the control panel were disassembled. There are also separate control panels for particular portions of the STS. For example, P.O. No. 33378 is for a sludge mobilization pump control panel and P.O. No. 38107 is for a hydrogen sensor and monitor for monitoring hydrogen gas in the high-level waste tank. The supernatant treatment system cannot be operated without the control panels.

H. Radiation Monitoring System (Ex. 44, pt. 9, P.O. Nos. 26569, 17995, 33520 and 18403). Radiation monitors are installed throughout the STS system to determine the performance of the system and ensure the safety of the operators. These monitors are installed on the equipment and are not used for monitoring personnel. The monitors are installed by welding them onto a part of the piping transfer system and are shielded so that background radiation is not picked up on the monitors.

I. Pneumatic Transfer System (Ex. 44, pt. 10, P.O. No. 22470). This purchase order relates to the purchase, installation and construction of a transfer system used to transfer samples from the STS valve aisle, through the process building, and into the hot cells of the laboratory. The system is an overhead transfer system and operates similar to a vacuum tube transfer system used at drive-through windows at banks. The system consists of welded piping with radiation detectors located at points along the system, so that if a sample gets stuck an alarm will sound. The transfer system runs both inside and outside of a building. Outside, the transfer system runs on a support structure that gets up to 20 feet off the ground, so that it is far away from people. The entire system is welded together and is highly contaminated inside. It could not be removed without damaging it and it would have to be cut up if it were removed.

2. Liquid Waste Treatment System ("LWTS") and Cement Solidification System ("CSS").

As discussed previously, the LWTS removes excess water from the pretreated waste and the cement solidification system converts the pretreated waste to a cement form which is stored in square steel drums. The LWTS and CSS, as part of the pretreatment system, are necessary for the reduction of the amount of waste to be vitrified.

A. Cement Solidification Mixers (Ex. 45, pt. 1, P.O. Nos. 21164,26762, 21588 and 32125). High shear cement solidification mixers are used in the CSS to mix the pretreated waste and cement. The mixers are bolted to stands that provide structural support for them and are attached to the CSS system via piping so that ingredients can enter the mixers. The cement solidification system is a high volume prototype for the pretreatment of high level radioactive

waste. The mixers used in the CSS can be contrasted with the Ross mixers petitioner uses for cement solidification of low level radioactive waste and which are not part of the pretreatment system. Unlike the high shear cement solidification mixers used in the pretreatment system, Ross mixers are used at other sites in the United States.

B. Tanks (Ex. 45, pt. 2, P.O. Nos. 13585, 17931, 14135, 14517 and 14889). The LWTS consists of a number of tanks and vessels through which the pretreated waste passes while the water is being removed. The purchase orders in this category are for such tanks and vessels. The tanks and vessels are supported on structural steel and cemented or grouted in place for structural support, and are also attached via a piping system.

C. Control Panel (Ex. 45, pt. 3, P.O. Nos. 15654, 40452, 15948, 17930 and 17937). This section deals with portions of a control system for the LWTS, which is similar to the STS control panel, but has a significantly greater number of control features. The LWTS control panel is fabricated in the same way as the STS control panel that comes in a unit which includes an area that can be walked into in the back. The panel is 8 feet tall, 10 feet wide and 20 feet long. The control panel came as an entire unit which is put into place by a crane and the building structure was then built around it. Therefore, the control panel cannot be removed without damaging the building. The control panel is necessary to operate the LWTS.

D. LWTS and CSS Construction and Installation (Ex. 45, pt. 4, P.O. Nos. 22144, 22449, 26762, 26983, 10297, 12635, 29024, 29073, 23342, 43293, 17936, 36831, 17220, 17282, 31381, 26149, 28687, 28786, 40609, 17012, 26365, 26573, 12707, 28712, 26643, 15961, 24120 and 37646). This section relates to the construction and installation of the LWTS and CSS systems. In general, this category involves the purchase of equipment, piping, valves and instruments and the construction and installation of the equipment and hardware that makes up the the LWTS and CSS. Much of the existing process building that was in existence before the beginning of the project was reused and equipment for the CSS and LWTS was installed in the existing building. This involved installing piping, tanks, vessels, etc. The purchase orders in this section represent the "guts" of the LWTS and CSS.

E. Radiation Monitoring System (Ex. 45, pt. 5, P.O. Nos. 18403, 23380, 26573 and 20566). This monitoring system is similar to the one used for the STS and consists of radiation monitors which monitor process equipment, rather than people, and is necessary for the operation of the LWTS and CSS.

F. Master Slave Manipulators (Ex. 45, pt. 6, P.O. Nos. 36746, 36776, 38812, 38815, 38890 and 12924). These purchase orders are for a master slave manipulator for the analytical lab and parts for master slave manipulators. Master slave manipulators are used to run the CSS and LWTS, as well as in the laboratories for taking samples from the systems.

G. Sample Station/Glove Box (Ex. 45, pt. 7, P.O. Nos. 27946, 28425 and 26858). Sample stations/glove boxes are used in the LWTS to take samples to be analyzed in the lab. These are used so the operator does not come into contact with a radioactive sample. A glove box is a stainless steel box with glass or plexiglass on top so the operator can visually see into the box. The operator can reach into the box via glove ports which are used to manipulate the samplers inside the glove box assembly. Glove boxes are necessary in the pretreatment system in order to take samples for testing.

THE DETERMINATION OF THE ADMINISTRATIVE LAW JUDGE

The Administrative Law Judge considered petitioner's argument that all of its purchases were exempt from sales and use taxation pursuant to Tax Law § 1116(a)(2) because petitioner made such purchases as an agent of the Federal government (DOE). The Administrative Law Judge rejected the Division's argument that the phrase "insofar as it is immune from taxation" in Tax Law § 1116(a)(2) is more restrictive than Tax Law § 1116(a)(1) (applicable to the State of New York, its agencies, instrumentalities and political subdivisions) in that the exemption is co-extensive with the constitutional doctrine of Federal tax immunity and applies only where the imposition of tax would be constitutional. The Administrative Law Judge noted that a state "can tax any private parties with whom [the United States] does business, even though the financial burden falls on the United States, as long as the tax does not discriminate against the

United States or those with whom it deals" (***citing, South Carolina v. Baker***, 485 US 505, 99 L Ed 2d 592, 610).

The Administrative Law Judge considered the decision of the Supreme Court in ***United States v. New Mexico*** (455 US 720, 71 L Ed 2d 580). In a footnote, the Administrative Law Judge noted that in ***New Mexico*** the State sought to impose taxes on purchases of property and services made by private contractors pursuant to management contracts with the Atomic Energy Commission (now the DOE). The contractual relationship between the contractors and the Federal agency was substantially similar to that of petitioner and the DOE in this case. The Supreme Court held that the imposition of taxes by the State of New Mexico did not offend notions of Federal supremacy. Considering the factual similarities between ***New Mexico*** and the instant matter, the Administrative Law Judge concluded that it is clear that the imposition of tax herein does not violate Federal tax immunity.

Since the Tax Appeals Tribunal has determined that purchases by common law agents of the State of New York, in the scope of their agencies, are exempt from sales and use taxes under Tax Law § 1116(a)(1) (***see, Matter of MGK Constructors***, Tax Appeals Tribunal, March 5, 1992), the Administrative Law Judge concluded that any unjustified difference in the treatment of State versus Federal contractors constitutes a violation of the doctrine of intergovernmental tax immunity. The Administrative Law Judge concluded that since the imposition of tax herein does not violate principles of Federal sovereignty, if petitioner was not a common law agent of DOE it is not eligible for exemption under either interpretation of Tax Law § 1116(a)(2).

After thoroughly analyzing the relationship of petitioner and the DOE, the Administrative Law Judge concluded that petitioner had failed to establish that it was acting as the agent of DOE in making the purchases at issue herein and in performing its duties under the Contract.

The Administrative Law Judge rejected petitioner's alternative argument that if its purchases made under the Contract were not exempt pursuant to Tax Law § 1116(a)(2), then such purchases were excluded from sales tax as purchases for resale. The Administrative Law Judge concluded that to qualify for the resale exclusion under Tax Lax § 1105(a), petitioner

must show that the purchases were made "for one and only one purpose: resale [citations omitted]" (Determination, conclusion of law "I"). Irrespective of the fact that title to the tangible personal property purchased under the Contract passed to DOE, petitioner's purpose in making the purchases at issue was to enable it to fulfill its contractual obligation to manage and operate the Project and such property was used and consumed by petitioner in connection therewith. The Administrative Law Judge distinguished the cases relied on for this argument (***Bethlehem Steel Co. v. Joseph***, 284 App Div 5, 130 NYS2d 178 and ***Sweet Assocs. v. Gallman***, 36 AD2d 95, 318 NYS2d 528, ***affd*** 29 NY2d 902, 328 NYS2d 857) as being based on different statutory and regulatory schemes.

The Administrative Law Judge concluded, however, that petitioner was entitled to rely on the representation made by the Division in its letter of February 22, 1982 that petitioner "may act as an agent in the performance of contract No. DE-AC07-81ME44139 [sic]" (Exhibit "31"). The Administrative Law Judge concluded that it was reasonable for petitioner to so rely on the Division's representation and such reliance was to the detriment of petitioner. Thus, petitioner met the test for estoppel established by the Tribunal in ***Matter of Harry's Exxon Serv. Sta***., Tax Appeals Tribunal, December 6, 1988) and the Division was estopped from collecting sales tax on petitioner's purchases. Such estoppel, however, was limited to the period prior to January 25, 1989. The Administrative Law Judge found that petitioner was put on notice as of January 25, 1989 of the Division's position that it was not an agent of the Federal government. During the course of a meeting between representatives of petitioner and the Division's auditors on that date, the auditors orally advised petitioner of the Division's revised position on the agency issue.

The Administrative Law Judge rejected petitioner's argument that certain of its purchases resulted in capital improvements to real property and were, thus, excluded from the imposition of sales tax. The Administrative Law Judge concluded that while there was no issue as to whether the improvement substantially added to the value of the real property, certain of the purchases claimed by petitioner to have resulted in capital improvements did not meet the

affixation requirement of Tax Law § 1101(b)(9)(ii). Further, petitioner failed to establish that any of the improvements in question were intended to be permanent as required by Tax Law § 1101(b)(9)(iii). The Administrative Law Judge found no evidence in the record as to which of the subject improvements had some reasonable possibility of remaining at the site following the Project's conclusion. Additionally, since the language in the Contract indicated an intent that property installed at the Project not become part of the realty, petitioner failed to show an intention of permanency with respect to each of the specific improvements claimed herein to be a capital improvement.

As to petitioner's argument that certain of its purchases were exempt from tax under Tax Law § 1115(a)(10) as tangible personal property purchased for use or consumption directly and predominantly in research and development in the experimental or laboratory sense, the Administrative Law Judge analyzed the purchases at issue and concluded that petitioner established entitlement to the research and development exemption for its purchases of equipment and materials used in the five-year full scale vitrification program, purchases made in connection with the mini melter, purchases of miscellaneous VIT lab equipment, laboratory equipment, and the vitrification facility. However, the Administrative Law Judge found that petitioner did not establish entitlement to the R&D exemption with respect to purchases made in connection with the cement solidification system, the liquid waste treatment system, or the supernatant treatment system. Finally, the Administrative Law Judge disallowed the R&D exemption for those purchase orders claimed as eligible by petitioner but which were for services alone since that exemption is limited to purchases of tangible personal property and does not extend to installation and repair services. However, as to claimed purchase orders and invoices which listed a breakdown of charges for property and services, to the extent that such purchases are otherwise eligible for the R&D exemption, charges for tangible personal property contained in such purchase orders and/or invoices qualified for the exemption.

The Administrative Law Judge also concluded that petitioner was not subject to the use tax under Tax Law § 1110 with respect to its purchases because of his determination that such purchases were subject to sales tax.

ARGUMENTS ON EXCEPTION

Petitioner agrees with the Administrative Law Judge's conclusion that Tax Law § 1116(a)(2) does not require the Federal government to make its purchases directly in order for them to be exempt from taxation but it may use entities such as petitioner as a purchasing agent and still retain its immunity from sales and use taxation. Petitioner argues, as it did before the Administrative Law Judge, that the only relevant inquiry is whether petitioner is an agent of the DOE in making purchases for the Contract. Petitioner relies on 20 NYCRR 541.3(a) which provides that when a contractor's customer is a governmental entity under Tax Law § 1116(a)(1) or (2), the signed contract is sufficient proof of the exempt status of purchases made for the contract. Further, relying on general agency principles, in accord with the decision of the Tax Appeals Tribunal in ***Matter of MGK Constructors*** (***supra***), petitioner argues that it acted as DOE's agent in making purchases for the Project because it acts on behalf of DOE and is subject to DOE's control with respect to such purchases.

Petitioner argues that although the Administrative Law Judge analyzed all the elements of petitioner's contract with DOE, he overlooked the most important point - the only issue is whether petitioner is the purchasing agent of the DOE in making purchases for the Project, not whether the DOE has control over all of petitioner's activities under the Contract. In other words, petitioner is an agent for purposes of purchasing only and is not the agent of the DOE in respect to every aspect of the performance of its contractual duties.

Petitioner also contends that, if its purchases under the Contract were not exempt pursuant to Tax Law § 1116(a)(2), then they were excluded from sales tax pursuant to Tax Lax § 1105(a) as purchases for resale. Petitioner argues that it is entitled to the resale exclusion with respect to all purchases made under the Contract because all such property and services are immediately resold to DOE. Petitioner notes that under the Contract title to all such property

passes directly from the vendor to DOE. Petitioner further notes that once property is purchased under the Contract, petitioner is required to account for and to treat the property as owned by DOE. When the property is no longer needed, petitioner disposes of it using DOE procedures. Petitioner asserts that such facts indicate that all property purchased under the Contract is resold and, therefore, not subject to tax.

Petitioner agrees with the determination of the Administrative Law Judge that the Division should be estopped from assessing sales and use taxes because petitioner reasonably relied on the Division's letter dated February 22, 1982 to its detriment. However, petitioner argues that the Administrative Law Judge erred in determining that the estoppel period ended on January 25, 1989. Rather, such period should be extended to February 12, 1990, the date on which petitioner was first clearly and unequivocally advised by the Division that it could no longer rely on the February 22, 1982 letter.

Petitioner disagrees with the conclusion of the Administrative Law Judge that certain of its purchases were not entitled to exemption as having resulted in capital improvements to real property because petitioner did not establish that such improvements met the affixation requirement of Tax Law § 1101(b)(9)(ii) or were intended to be permanent as required by Tax Law § 1101(b)(9)(iii). Further, petitioner argues that even if it has failed to establish that the improvements considered by the Administrative Law Judge qualify as capital improvements, petitioner's purchases should still qualify for exemption pursuant to Tax Law § 1115(a)(15) and (16) as tangible personal property used in erecting a structure or building of an exempt organization, or adding to, altering or improving real property, property or land of such organization or maintaining, servicing or repairing real property, property or land of an exempt organization. Petitioner argues that the Administrative Law Judge's determination does not address the applicability of these sections.

Petitioner also asserts that the Administrative Law Judge failed to accord certain of its purchases an exemption pursuant to Tax Law § 1115(a)(10), which exempts from sales and use tax "[t]angible personal property purchased for use or consumption directly and predominantly

in research and development in the experimental or laboratory sense." Finally, petitioner argues that the Administrative Law Judge erred in determining that certain purchase orders, which include separate charges for research and development materials and equipment, do not include a breakdown of charges for property and services.

The Division, in addition to opposing the assertions of petitioner, argues in its exception that the Administrative Law Judge erroneously concluded that Tax Law § 1116(a)(2) is not limited to situations where the imposition of tax would be unconstitutional. As such, his determination is beyond the jurisdiction of the Division of Tax Appeals because it amounts to a determination of the facial validity of Tax Law § 1116(a)(2). Rather, that section is appropriately applied only when the tax is on the United States itself or on an agency or instrumentality so closely connected to the government that the two cannot realistically be viewed as separate entities. Since the purchase transactions involved in this proceeding are not immune from state taxation (relying on ***United States v. New Mexico, supra***) the sales tax was properly imposed on petitioner. Further, the Division argues that the Administrative Law Judge correctly concluded that petitioner is not an agent of the DOE, primarily based on the contractual provisions specifying the non-liability of the Federal government for purchase orders in the name of petitioner and petitioner's control over the many facets of the Project.

The Division asserted that the Administrative Law Judge erred in concluding that the February 22, 1982 letter provided the basis for an estoppel claim against the Division and that petitioner did not demonstrate the elements necessary to entitle it to have relied on that letter nor that it was relied on to petitioner's detriment. In any event, the Division argues that an estoppel claim should not extend beyond the date found by the Administrative Law Judge to be the date on which petitioner was clearly advised by the Division that it was no longer entitled to rely on the February 22, 1982 letter.

OPINION

Petitioner argued that certain of its purchases were exempt from taxation pursuant to Tax Law § 1115(a)(15) and (16) on the basis that they consisted of tangible personal property sold to

a contractor for use in erecting a structure or a building of an exempt organization, or adding to, altering or improving or maintaining, servicing or repairing the real property of an organization described in Tax Law § 1116(a). The Administrative Law Judge considered whether or not the purchases at issue consisted of capital improvements based on the criteria for a capital improvement set forth in Tax Law § 1101(b)(9). He concluded that petitioner did not meet its burden of proof to establish that the improvements in question were intended to be permanent and, thus, were not entitled to an exemption from taxation. While petitioner's arguments were primarily directed to the issue of capital improvements, it did raise the issue of the applicability of Tax Law § 1115(a)(15) or (16) albeit without analysis or authority. The Administrative Law Judge did not make a specific conclusion as to whether or not petitioner's purchases met the test of those sections, including it under the subheading "Capital Improvement Issue." Notably, those sections do not appear on their face to require that the tangible personal property be made part of a capital improvement in order to qualify for exemption. As a result, we remand this matter to the Administrative Law Judge for consideration of those purchases set forth by petitioner in pages 12-26 and 43-57 of Appendix A to its post-hearing brief in light of Tax Law § 1115(a)(15) and (16) for exemption.

We retain jurisdiction of this matter but withhold decision and remand this matter to the Administrative Law Judge for his determination on this issue for the following reasons.

> "The fullest possible development of an issue occurs in our two-stage hearing/exception process when the Administrative Law Judge renders a determination on an issue stating a complete rationale for the conclusion and the litigants debate the correctness of the Administrative Law Judge's rationale and conclusion on exception. This two-stage process gives the Tribunal, and ultimately the courts, the benefit of the Administrative Law Judge's research and analysis as well as the parties' research and analysis in response to the Administrative Law Judge's determination. To the extent that an Administrative Law Judge does not address an issue explicitly raised by the parties in the proceeding or does not state a rationale for a conclusion that is reached, we are either deprived of this benefit or we must remand the case to obtain the Administrative Law Judge's opinion and the parties' responses to it (***see, e.g., Matter of Plymouth Tower Assocs***., Tax Appeals Tribunal, December 27, 1991, ***Matter of Air Flex Custom Furniture***, Tax Appeals Tribunal, September 12, 1991). In either case, the hearing/exception process does not perform in its most effective and efficient manner" (***Matter of United States***

Life Ins. Co. in the City of New York, Tax Appeals Tribunal, March 24, 1994).

To limit the delay, we request that the Administrative Law Judge issue his determination on this issue within 30 days of the date of this decision without the submission of further briefs by the parties. The parties will have ample opportunity to brief the issues if an exception is taken to the Administrative Law Judge's determination on remand.

Accordingly, it is ORDERED, ADJUDGED and DECREED that this case be remanded so that the Administrative Law Judge can address the issue raised in the discussion herein. Such determination shall be issued within 30 days from the date of this decision. Upon issuance of such determination, the full record shall be returned to the Tax Appeals Tribunal for a decision on the issues raised on exception.

DATED: Troy, New York
December 11, 1997

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Donald C. DeWitt
President

_____
Carroll R. Jenkins
Commissioner

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Joseph W. Pinto, Jr.
Commissioner