

**New York State Department of Taxation and Finance**  
**Taxpayer Services Division**  
**Technical Services Bureau**

TSB-A-97(5)S  
Sales Tax

STATE OF NEW YORK  
COMMISSIONER OF TAXATION AND FINANCE

ADVISORY OPINION

PETITION NO. S960319C

On March 19, 1996 the Department of Taxation and Finance received a Petition for Advisory Opinion from Dresser-Rand Company, 1 Baron Steuben Place, Corning, New York 14830-2696. Petitioner, Dresser-Rand Company, submitted additional information pertaining to this petition on August 19, 1996.

The issue raised by Petitioner is whether a fully integrated computer aided design (engineering) and manufacturing system (CAD/CAM/CAE) consisting of hardware, software and maintenance, is subject to sales and compensating use tax.

Petitioner presents the following facts. Petitioner is a supplier/manufacturer of capital equipment and technological information used in the energy and process industries, and engineers its products to the specific requirements of customer orders. The CAD/CAM/CAE system will be used for the design and manufacture of products. The CAD/CAM/CAE system is intended to be used in two main processes, namely, Product Development and Order Execution.

The system provides a single CAD/CAM/CAE package solution for engineering and manufacturing processes to meet customer needs and facilitates the engineering and manufacturing process by eliminating the duplication of work, reducing customer order cycle time, and improving customer order quality.

Product Development Process:

The end result of the Product Development Process will be a documented definition of a marketable product. This documented definition will include a parametric solid model of the product, and the engineering rules for its use and applicability. Engineering will use the CAD/CAM/CAE system to develop product designs necessary to meet customer order requirements utilizing parametric solid modeling techniques.

The parametric solid model will be created in the CAD/CAM/CAE system and will have associated with it the supporting drawings and numeric control (NC) toolpath required for the manufacture of the product.

Once a product is developed, the parametric solid model will be made available to the Order Execution Process for use on customer orders.

Order Execution Process:

In the Order Execution Process, which starts at the point of a customer order, and ends at the delivery of the product ordered by the customer, much use will be made of the CAD/CAM/CAE system. The envisioned workflow is outlined below:

1. On receipt of a customer order a definition of the product sold will be given to Engineering.
2. Engineering will search the CAD/CAM/CAE system for previously created components that meet the customer requirements.
3. Any components located in step 2 above will be copied to an order specific folder in the CAD/CAM/CAE system.
4. Those components that are required to meet the customer order but have not been previously created, will be created from parametric base models for the components that are stored in the CAD/CAM/CAE system. These base models are created in the product development process outlined above. These base models represent the generic design for the component and contain the design rules and constraints to produce a specific instance of the component in order to meet customer requirements.
5. In order to create a contract specific instance of a component from a parametric base model, the parametric base model will be copied to the order specific folder in the CAD/CAM/CAE system. The base model components will then be renamed to order specific part numbers.
6. The parameters of the base model will be adjusted as necessary to create the order specific instance of the component.
7. Attributes defining the order specific component will be added to the order specific model, so that it can be searched for and re-used on later orders.
8. Associated drawings and NC toolpath will be inspected and adjusted if necessary for the order specific components.
9. An assembly will be created in the CAD/CAM/CAE system from the order specific components. This assembly will define the customer order, provide an engineering bill of material, provide the manufacturing and inspection drawings for the customer order, and provide the necessary NC programs to manufacture the components for the customer order. Manufacturing, due to the integration of the system, will utilize the numerical control (NC) programs generated by the CAD/CAM/CAE system to drive computer numerical controlled (CNC) machine tools to make the parts.

#### Applicable Law and Regulations

Section 1115(a)(10) of the Tax Law provides an exemption from sales and use tax for:

Tangible personal property purchased for use or consumption directly and predominantly in research and development in the experimental or laboratory sense. Such research and development shall not be deemed to include the ordinary testing or inspection of materials or products for quality control, efficiency surveys, management studies, consumer surveys, advertising, promotions or research in connection with literary, historical or similar projects.

Section 1115(a)(12) of the Tax Law provides in part for an exemption from sales and use tax for:

Machinery or equipment for use or consumption directly and predominantly in the production of tangible personal property, ... for sale, by manufacturing, processing, generating, assembling, refining, mining or extracting, ....

Section 528.11 of the Sales and Use Tax Regulations provides in part, that:

(a) Exemption. (1) The sale of tangible personal property purchased for use or consumption directly and predominantly in research and development in the experimental or laboratory sense is exempt from the sales and use tax.

\* \* \*

(4) An Exempt Use Certificate (form ST-121) is used to make purchases eligible for this exemption, without payment of sales tax. (See section 532.4(e) of this Title.)

(b) Research and development. (1) Research and development, in the experimental or laboratory sense, means research which has as its ultimate goal:

(i) basic research in a scientific or technical field of endeavor;

(ii) advancing the technology in a scientific or technical field of endeavor;

(iii) the development of new products;

(iv) the improvement of existing products; and

(v) the development of new uses for existing products.

(2) Research and development in the experimental or laboratory sense does not include:

(i) testing or inspection of materials or products for quality control (for machinery and equipment used for quality control in the production of products for sale, see section 528.13 of this Part);

(ii) efficiency surveys;

(iii) management studies;

(iv) consumer surveys, advertising and promotions; and

(v) research in connection with literary, historical or similar projects. (c) Directly, predominantly, exclusively. (1) Direct use in research and development means actual use in the research and development operation. Tangible personal property for direct use would broadly include materials worked on, and machinery, equipment and supplies used to perform the actual research and development work. Usage in activities collateral to the actual research and development process is not deemed to be used directly in research and development.

(2) Tangible personal property is used predominantly in research and development if over 50 percent of the time it is used in such function.

(3) Tangible personal property is exempt only if it meets the tests of direct and predominant use.

Section 528.13(a)(1) of the Sales and Use Tax Regulations provides that:

An exemption is allowed from the tax imposed under section 1105(a) of the Tax Law, and from the compensating use tax imposed under section 1110 of the Tax Law, for receipts from sales of:

(i) machinery or equipment used or consumed directly and predominantly in the production for sale of tangible personal property, gas, electricity, refrigeration or steam, by manufacturing, processing, generating, assembling, refining, mining or extracting; and ....

### Opinion

Petitioner's Product Development Process results in the creation of a documented definition of a generic marketable product. The documented definition includes a parametric solid model of the product and the engineering rules for its use and applicability. The parametric solid model will have associated with it the supporting drawings and numeric control (NC) toolpath. Once a generic product design is developed, the parametric solid model is made available to the Order Execution Process as part of the fully integrated CAD/CAM/CAE system or the design of specific products ordered by customers. Petitioner's use of the CAD/CAM/CAE system in this instance to create documented definitions of generic marketable products is directly in research and development and qualifies for the research and development exemption if used predominantly (more than 50% of the time) in research and development.

In Petitioner's Order Execution Process, the use of the CAD/CAM/CAE system to produce product designs for specific customers as outlined above, does not act upon material to form a product for sale and does not have an active causal relationship in the production of the product to be sold. Petitioner's CAD/CAM/CAE system, therefore, is not used directly in production within the

TSB-A-97(5)S  
Sales Tax

meaning and intent of Section 1115(a)(12) of the Tax Law when it is used to design products. Where the CAD/CAM/CAE system produces numerical control (NC) programs to drive computer numerical controlled (CNC) machine tools to make the parts, the machinery and equipment used to produce the numerical control (NC) programs would qualify for the exemption provided under section 1115(a)(12) of the Tax Law where used over 50% of the time directly in production for sale.

Where the Petitioner's totally integrated CAD/CAM/CAE system is used both in research and development and production of tangible personal property for sale, the exemptions provided in Sections 1115(a)(10) and (12) of the Tax Law will apply if such machinery and equipment is used, in total, more than 50% of the time for the qualifying purposes. However, whether Petitioner's use of the CAD/CAM/CAE system described above is exempt from tax under Sections 1115(a)(10) and (12) is a factual matter not susceptible of a determination in an advisory opinion. Clearly, certain aspects of use by Petitioner of its CAD/CAM/CAE system in its business activities fall within the purview of the above quoted sections of the Tax Law and regulations.

DATED: February 6, 1997

/s/  
John W. Bartlett  
Deputy Director  
Technical Services Bureau

NOTE: The opinions expressed in Advisory Opinions are limited to the facts set forth therein.