



Specification No. 203-HJT-9006 R0

# **Specification for the MERIT Mercury-Jet Experiment Stainless Steel Hg Supply Systems**

**May 1, 2006**

**SPECIFICATION FOR THE HIGH POWER MERCURY-JET EXPERIMENT  
STAINLESS STEEL HG SUPPLY SYSTEMS**

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## 1.0 Scope

This procurement specification is issued on behalf of Oak Ridge National Laboratory (ORNL), hereafter referred to as the Company. It is a “build-to-print” procurement and contains the requirements for the fabrication and assembly of stainless steel components consisting of two (2) versions of a Hg supply and nozzle system.

These parts provide a portion of the primary containment for the Mercury Intense Target (MERIT) system. MERIT will be used to perform tests at ORNL, MIT’s Plasma Science and Fusion Center, and CERN in Switzerland.

Acceptance tests at the Seller’s site shall consist of checking certain critical dimensions, and verifying the leak-tightness of the containment structures. Upon completion of the acceptance tests, the equipment shall be delivered to ORNL in Oak Ridge, TN.

*It is pointed out that although this equipment is for a mercury-based target experiment, the Seller will not deal with nor handle mercury in any way.*

### **Under the provisions of this subcontract the Seller shall provide the following:**

#### **1. Hg Supply Assy A (Drawing 203-HJT-0620A)**

- Seller shall provide materials and labor for the entire assembly.

#### **2. Hg Supply Assy B (Drawing 203-HJT-0620B)**

- Seller shall provide materials and labor for the entire assembly.

The attachment to this specification contains the drawings referenced above. The drawings, in addition to specifying dimensions, also specify component materials, commercially available procurements, and field notes that refer to welding and inspections, and material certifications.

## 2.0 Applicable Codes and Standards

- Welding per ASME Section IX; code stamping is not required. Radiographic weld inspection is not required, but 100% dye penetration weld inspection is required.

## 3.0 Inspection and Testing

As part of the Company’s quality assurance program, the Company shall have the right to inspect the Seller’s facility or any sub-tier Seller facility that the Company determines necessary

to ensure that quality objectives are met. Source surveillance by the Company representative shall in no way relieve the Seller of the responsibility to furnish acceptable items.

### **3.1 Acceptance Testing**

The Company shall have the right to witness final functional testing and inspection of the equipment at the Seller's site. Such testing shall be specified by the Seller to ensure full compliance of the equipment with the requirements of this specification. The requirement for witnessed-tests and inspections are at the Company's discretion upon notification by the Seller that the work has been completed. Acceptance tests shall take place at the Seller's site using the actual components, equipment, and materials that will be delivered to the Company.

Final acceptance tests of the primary containment assemblies shall include checking several critical dimensions and review of the weld inspection reports.

### **3.2 Seller's Responsibilities**

The Seller shall notify the Company ten (10) working days prior to the start of tests and inspections that are designated above. The Company at its discretion shall have representatives witness the performance tests. In addition, the Seller shall supply the Company with material certifications as specified on certain drawings in the attached drawing package.

## **4.0 Quality Assurance**

### **4.1 Non-Conforming Items**

The Company expects to receive equipment items, components, materials, and documentation that conform to all codes, standards, specifications, and procedures in the Agreement. The Seller may use its own nonconformance program to identify, report, and recommend disposition of all non-conforming items, but disposition that would leave any remaining nonconformity must be submitted to the Company for approval. A nonconformity request should identify the affected item(s) by name and serial number (if applicable), citing the drawing/specification number and revision number containing the specific requirement that has not been met. The Seller or the Seller's supplier may attach a description of the cause, and a corrective action plan and schedule if pertinent.

*Note:* The issuance and acceptance of such a request does not limit or affect the warranty provision of the Agreement. Such a request shall not establish a precedent or obligation to accept existing or future items not conforming to all provisions of the Agreement.

## **4.2 Seller's Requested Deviations**

The Seller may propose deviations from the specifications, drawings, or other technical requirements of this procurement. Where time is a consideration, the Seller may communicate the proposed deviations or changes directly to the Company's principal engineer or technical lead with a copy to the Company's buyer. The engineer or technical lead will evaluate the technical aspects and recommend to the buyer, who will communicate acceptance or disapproval to the Seller. The request should identify the affected items, drawing/specification number and revision number, a description of the proposed deviation, and the justification for it.

## **4.3 As-Built Drawings**

The Seller shall note any changes to the drawings due to errors or missing information, or changes to the components due to Company approved deviations, and provide the Company with a copy of the marked-up drawings.

## **5.0 Schedule**

The primary containment fabrications and acceptance testing shall be completed 5 weeks after subcontract award. Delivery to ORNL shall take place immediately thereafter.

## **6.0 Packing, Shipping and Handling**

The containment structure assembly shall be packed for shipping in a sturdy cardboard or wooden crate with loose pieces suitably wrapped to prevent damage during shipment, and shipped by ground transport.

### **6.1 Equipment Identification**

Each major assembly or component shall be tagged indicating the Seller's name and address, the Seller's equipment identification information, date of manufacture, and Company information as shown below:

Seller name and address  
Seller equipment identification number  
Date of manufacture

UT-Battelle, LLC  
ORNL, MERIT Hg Target Experiment  
Oak Ridge, TN 37831  
Specification No.203-HJT-9006.