

University of Missouri Bid Event: Addendum 1

Event ID: UOFMO- #21009

Event Dated: October 14, 2020

Event Name: RADIOCHEMICAL PROCESSING HOT CELLS

The questions listed below were received from the bidding community. The corresponding answers were provided by the requesting department. The specifications listed in the table below are modified as follow and except as set forth herein, otherwise remain unchanged and in full force and effect:

Addendum 1, dated November 12, 2020

The RFB deadline has been extended to December 2, 2020 at 2:00 p.m. CT . This extension is being granted due to numerous requests from bidders. This will allow bidders the opportunity to review the information in this addendum and provide a response.	
QUESTION	ANSWER
Can air locks be purged with bleed air from the hot cell's supply air? That would make dedicated filter obsolete.	We would be interested in reviewing that design. Please provide specifics in your bid.
p.17-9 Should sliding trays be removable by master-slave?	Manual removal of the sliding trays should be sufficient.
p.17-9 What is the length of the air locks?	The draft design used 2'. This was an estimate to allow for entry doors for moving materials into the cells. This is not an absolute measurement
p.17 can we offer HWM-manipulators? The two respective passages in the RFP are conflicting. One allows for alternative suppliers while the other explicitly asks for CRL.	CRL are preferred but bidders have the option to also specify alternatives

<p>What is the longest half-life within the significant nuclide spectrum of the respective hot cell lines? This information could affect design through revision intervals.</p>	<p>Information on the isotopes being handled will be provided upon execution of a contract and NDA.</p>
<p>What is the rationale to deploy laminar flow units apart from the (ISO 5) dispensing cell? We would advise to reach ISO 7 requirements without laminar flow since these units pose additional monetary and spatial requirements not offset by the reduced air flow requirement from hot cell line ventilation.</p>	<p>Laminar flow for ISO 7 cells is likely not necessary. Please specify your rationale for non-laminar flow.</p>
<p>Is full UL-certification required here?</p>	<p>Yes</p>
<p>p. 16-4 list of applicable documents - when shall it be provided? What is our regulatory basis? EU-machinery directive acceptable and/or US-standards?</p>	<p>Ideally the design will be able to meet both EU and US standards</p>
<p>p. 13 please describe purpose of the 'polishing cell' in order to adapt the preliminary design closer to ist special requirements</p>	<p>Its purpose is to purify the product by removing low level contaminants</p>
<p>What will be the designated class of the room?</p>	<p>ISO 8</p>
<p>p. 15 What will be the max. size of parts to be transferred, like casks etc.?</p>	<p>The largest single item is the cask that delivers the target to HC #1 and it is ~6" in diameter, ~13" tall and weighs ~350 pounds.</p>

<p>p. 15 Instead of a complete hot cell, could there be a pass through autoclave acting as substitute? This approach would have an enormous cost saving impact.</p>	<p>A shielded pass through autoclave option would be encouraged.</p>
<p>p. 15 What is the max. number or volume of items to be autoclaved at once? Alternatively, is there a process time requirement for a given number of items to be autoclaved?</p>	<p>Approximately 40, 5-ml vials. A typical autoclave run takes approximately 1.5 hours</p>
<p>p. 15 What is the minimum clearance of the access point for transferring equipment and materials into and between the second and third cells?</p>	<p>The largest items used in HC #2 include columns up to 18" in length. If these enter the cell through the airlock between cells #1 and #2, then an opening of the order of 12" is likely adequate between HC #2 and HC #3</p>
<p>p. 15 What will be the weight of shielded (1" lead) pig?</p>	<p>Approximately 25 kg</p>
<p>p. 18 A highly resistant polymeric surface layer (HALAR) for processing and polishing HC can be offered for optimum protection against Triflic acid and hydrochloric acid.</p>	<p>Please specify this coating in your bid</p>
<p>p. 17 What will be the required shielding thickness for the filter banks?</p>	<p>2"</p>
<p>p. 17 Is a manually operated switch valve acceptable for these redundant filter banks?</p>	<p>Yes</p>
<p>p. 17 protective cover or coating to protect the window from physical shock, can it be made of PMMA or rather PC or special glass?</p>	<p>Please specify your options and your recommendation</p>

<p>Is there any requirement for a seismic analysis of the HC lines?</p>	<p>No</p>
<p>1.2 – General Information - To be included in scope of supply or will it be provided by MURR? Can you please specify brand/model and utilities needed?</p>	<p>MURR will provide. Likely a Tuttnauer3780M. If you have an option for an add-on autoclave we would be interested in information on it.</p>
<p>1.2 – General Information - Is it possible to get a DWG layout with highlighted the rigging pathway and final installation room?</p>	<p>The installation pathway is straightforward. The drawing below shows a “garage door” opening on the left end of the suite that will remain open until after hot cell installation. To the left of this opening is a hallway that includes another garage door that opens to the outside. Thus all equipment can come directly from the outside, through two large openings and into the hot cell suite.</p>
<p>1.2.1 – Four Cell Processing System - For lead windows dimensioning, can you please specify the reference isotope for the calculation of 150mm Pb equivalence?</p>	<p>The specifics of the isotopes involved will be conveyed to the successful bidder after the awarding of a contract and NDA.</p>
<p>1.2.1 – Two Cell Target Fabrication System - Reference isotope for windows dimensioning?</p>	
<p>1.3 General Process Flow - Do you have a drawing of the cask?</p>	<p>Added</p>

<p>1.3 General Process Flow - Cask docking station to hot cell1 only, or also hot cell 2 and airlock?</p> <p>Front or back access for trolley?</p>	<p>We are suggesting an additional exterior opening on the pass through between HC #1 and HC #2, not a cask docking station, for moving targets into HC #1. The drawing shows front access, but rear access could also be considered if there is a compelling reason.</p>
<p>1.3 General Process Flow –</p> <ul style="list-style-type: none"> • Cask dimensions? • How the casks are handled from the first to the last hotcell? • On which side? Rear or Right side? 	<p>6.6 cm diameter x 15.7 cm high</p> <p>Not sure the question. Separate casks will be used for 1: target entry (see figure inserted above) and product removal (specified immediately above).</p> <p>Not certain – let’s assume rear for now.</p>
<p>1.3 – General Process Flow - Do you refer to the intermediate airlock between two cell or another one?</p>	<p>Airlock on entry – single door between cells</p>
<p>1.3 – General Process Flow - Glove access on internal Perspex panel or on the movable sliding shielded door?</p>	<p>We believe that dose rates will be sufficiently low to allow for only a Perspex panel. However, having the option of a sliding shielded door may be prudent. Would you be kind enough to bid both options?</p>

<p>1.3 – General Process Flow - 10' are not enough to allow the installation of hotcells with internal height of 1500 and laminar flow system. In addition for the turbulent hotcells the free space above is not enough to allow the installation of shielded HEPA filters.</p>	<p>It may be possible to relocate some ceiling services to allow more space, but 10' is a nominal value. Per the drawing in this document we have included a filter "closet" so that HEPA filters need not be on top of the cells</p>
<p>2 Scope - Do we have to include a dispensing system? Which are the characteristics of the dispenser if needed?</p>	<p>No – no dispenser equipment is requested from bidders</p>
<p>5.1.4 - Four Cell Processing System – Also inlet has to be shielded. Also, redundant inlet?</p>	<p>Inlet need not be shielded Redundant, parallel filters on that</p>
<p>5.1.7 - Please clarify? Being ISO 7 laminar airflow should not be needed here?</p>	<p>Laminar airflow is probably not needed</p>
<p>5.1.9 - Maximum weight to be loaded on this tray?</p>	<p>Maximum weight is minimal (a few kg) with the exception of the tray that is used to bring target material into HC #1 (350 pounds) and the tray to handle cask inserts for product leaving the facility out of the autoclave cell (also 350 pounds)</p>
<p>5.1.16 - Please clarify?</p>	<p>What capabilities are provided to test for leakage past seals.</p>

<p>5.1.18 - Is this pressure the working pressure or the maximum leak test pressure?</p>	<p>Test pressure</p>
<p>5.1.21 - Is this a conventional ion chamber dose calibrator or something different?</p>	<p>This port is for a gamma spectroscopy system used to monitor the process. The 2.5" diameter is meant to be a minimum diameter. Larger ports can also be considered</p>
<p>5.1.21 - Provided by hot cell supplier or MURR?</p>	<p>MURR will provide</p>
<p>5.2.3 – Class 7 + LAF? Height not fit in 10' room.</p>	<p>See above</p>

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