



# **Deliverable M3SF-23IN010103018 Helium Leak Test Bell Jar**

February 2024

*Changing the World's Energy Future*

Devin D Imholte



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# **Deliverable M3SF-23IN010103018 Helium Leak Test Bell Jar**

**Devin D Imholte**

**February 2024**

**Idaho National Laboratory  
Idaho Falls, Idaho 83415**

**<http://www.inl.gov>**

**Prepared for the  
U.S. Department of Energy  
Under DOE Idaho Operations Office  
Contract DE-AC07-05ID14517**



May 30<sup>th</sup>, 2023

Ned Larson  
Federal Program Manager  
U.S. Department of Energy  
1000 Independence Ave SW  
Washington, D.C. 20585

SUBJECT: Deliverable M3SF-23IN010103018—Helium Leak Test Bell Jar

Dear Ned:

This memorandum serves as a notification of the completion of deliverable M3SF-23IN010103018, entitled “Helium Leak Test Bell Jar.”

The Helium Leak Test Bell Jar (“Bell Jar”) was designed by Idaho National Laboratory (INL) for performing leak tests of the closure welds on the Department of Energy Standard Canister (DOESC). The Bell Jar will be used in the upcoming DOE Spent Nuclear Fuel Packaging Demonstration. A prototype of the Helium Leak Test Bell Jar was fabricated by INL Fabrication Services. Fabrication included procurement, machining, welding, examination, and leak testing. This prototype will now be used for follow-on qualification testing of the DOESC Closure Leak Test process. Please see the attached photograph of the Helium Leak Test Bell Jar and the associated photocopy of the Quality Acceptance tag.

If you should have any questions regarding this topic, please feel free to contact me.

Regards,

D. Devin Imholte, PE  
***Mechanical Engineer / Used Fuel Management***  
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Attachments:

1. Photograph of Helium Leak Test Bell Jar assembly (INL Fabrication Work Request 23-151)
2. INL Quality Accepted Tag for DOESC Closure Leak Test Assembly (“Bell Jar”)

Distribution List:

cc: Dave Sassani, National Technical Director  
Andrew Orrell, Control Account Manager  
Dan Thomas, Work Package Manager/Department Manager



*Attachment 1: Photograph of Helium Leak Test Bell Jar assembly  
(INL Fabrication Work Request 23-151)*

W.O./Purchase Order No.	Revision No.	Receipt No.	Quality Level
23-151	3	N/A	1 2 ③
Line Item No.	Quantity Inspected	Catalog I.D. No.	QA/UTC No.
1	1	N/A	23-151
Item Description			
Fabricated Item Bell Jar Enclosure Assembly			
Specification/Drawing	Rev.	Heat No.	Serial No.
1014421	000A	N/A	-1
Facility/Area/System	Inspector Signature	S. No.	Date
ATR	Ben Bmwe	130701	5/30/23

*Attachment 2: INL Quality Accepted Tag for DOESC Closure Leak Test Assembly ("Bell Jar")*