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SECOND TARGET STATION (STS) PROJECT
Interface Control Document for Target Systems and Instrument Systems

Mike Strong
Van Graves

January 19, 2023

OAK RIDGE NATIONAL LABORATORY
MANAGED BY UT-BATTELLE FOR THE US DEPARTMENT OF ENERGY

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Prepared by
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Approvals

Interface Control Doc. for Target Systems and Instrument Systems		ISSUE DATE: January 19, 2023
PREPARED BY Mike Strong, Van Graves	PROJECT Second Target Station	DOCUMENT NUMBER: S01020500-IC0004

	Signature / Date					
	Rev. 00	Date	Rev. 01	Date	Rev. 02	Date
Instrument Configuration Control Manager	Van Graves		Van Graves			
	/s/ Van Graves	04/13/2022	Van Graves Digitally signed by Van Graves Date: 2023.01.19 11:51:15 -05'00'			
Target Configuration Control Manager	Peter Rosenblad		Peter Rosenblad			
	/s/ Peter Rosenblad	04/11/2022	Peter Rosenblad Digitally signed by Peter Rosenblad Date: 2023.01.19 10:52:40 -05'00'			

Revision	Description
00	Initial Release
01	Updated IS0023 ‘Responsible’ resources and added interface point to IST10028 in section 5. Updated Interface Sheet release date in section 6.

CONTENTS

1. PURPOSE

This purpose of this document is to control and coordinate the release of Interface Sheets documenting interfaces existing between SSCs in Target Systems and SSCs in Instrument Systems. This Interface Control Document (ICD) ensures:

- Each Structure, System or Component (SSC) within Target Systems that has an interface with an SSC in Instrument Systems has all necessary design input data from its corresponding SSC, and vice versa, when it is needed
- Each SSC from Target Systems and Instrument Systems that contains an interface with an SSC from the other knows what data is needed by the other SSC and when it is needed
- That each interface is completely defined

2. SCOPE

The scope of this document is to provide a complete listing of all interfaces between Target Systems and Instrument Systems.

3. ACRONYMS AND DEFINITIONS

HOG Hot Off Gas System
ICD Interface Control Document
IS Interface Sheet
SSC Structure, System or Component
WBS Work Breakdown Structure

4. REFERENCES

4.1 DOCUMENTS APPLICABLE TO THE INTERFACING SSCS

Ref	Document Titles	Document Control System Location

5. LIST OF INTERFACE SHEETS BETWEEN TARGET SYSTEMS AND INSTRUMENT SYSTEMS

Forecasted Interface Sheets are listed in this table, including relevant information to be included in the Interface Sheet.

Interface Sheet		Target Systems	Instrument Systems	Interface Points	Interface Steps	Responsible	forecast dates	
number	title	subsystems	subsystems	expected data	step listing		draft	released
S01020500-IS0023	Interface Sheet for Moderator Reflector Assembly and Instrument Systems	MRA/ Neutronics	Instrument Systems	Moderator viewed face locations & angles	• Moderator optimization • Instrument Systems selection • Early MRA analysis • Target height determination	Jim Janney, Leighton Coates	May 2022	May 2022
				Moderator viewed face elevations				
				Moderator neutronics performance				
S01020500-IS0025	Interface Sheet for S.03.06 Vessel Systems to S.04.03 Bunker	Vessel Systems	Bunker Systems	Insert alignment features size and locations relative to beltline & nozzles		Chris Anton, Zvonko Lazic	TBD	TBD
				Nozzle/insert flange & seal interface				
S01020500-IS0026	Interface Sheet for S.03.07 Target Station Shielding to S.04.03 Bunker	Target Station Shielding	Bunker Systems	Bulk Shielding Liner Extension to Maintenance Shutter Channels		Chris Anton, Zvonko Lazic	TBD	TBD
S01020500-IST10028*	Interface Sheet for Instrument Bunker Process Systems and Conventional Facilities	Process Systems	Bunker Systems	Cooling water supply to Monolith Inserts - penetration of bunker wall from HPV, pipe header run in trench, and connection to each Monolith Insert		Zvonko Lazic, Don Montierth (Matt Ladenburger, CF)	TBD	TBD

				Cooling water return to pipe pan near Core Vessel top - connection to each Monolith Insert, pipe header run in trench, and penetration of bunker wall through concrete to top pan				
				Water return pipe drain line - from return line header in trench, penetrates bunker wall, goes to HPV				
				Helium to Monolith Inserts - penetration of bunker wall, run header in trench, and individual supplies to the inserts from that header Hot Off Gas (HOG) to Monolith Inserts – penetration of bunker wall, header around monolith wall, individual connections to the inserts from header				

*This Interface Sheet will capture Target Systems, Instrument Systems and Conventional Facilities interfaces for piping and penetrations in the Bunker that cross the three L2s' scope and are expected to require close coordination. Description of interface points may include CF scope as multiple individual interfaces apply in each (Instrument Sys./Target Sys, Target Sys./CF & Instrument Sys./CF).

6. INTERFACE SHEETS AND REVISION LEVELS

Release dates for each Interface Sheet are listed in the following table.

Interface Sheet Number	Release Dates				
	Initial Release	Revision 01	Revision 02	Revision 03	Revision 04
S01020500-IS0023	May 17, 2022				
S01020500-IS0025	TBD				
S01020500-IS0026	TBD				
S01020500-IST10028	TBD				