EUROPEAN SPALLATION SOURCE

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Target Systems and Radioactive Materials Handling
Interface Control Document

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1. INTRODUCTION

1.1 Purpose of the document

The Interface Control Document (ICD) between the Radioactive Materials Handling and the Target System exhaustively collects and describes all the interfaces between these systems. It is an agreed specification of the interface between the parties.

This document supports the execution of the Interface Management Plan [1] as an A2B ICD. It is subject to the facility preliminary design review. Once approved, it is hereafter edited according to the configuration management plan [2].

1.2 Definitions, acronyms and abbreviations

Abbreviation	Explanation of abbreviation
ICD	Interface Control Document

1.3 References

[1] Interface Management Plan, ESS-0002917.

[2] Configuration Management Plan, ESS-0003688.

2. CHARACTERISTICS OF THE SYSTEMS

2.1 Target Systems purpose

The main function of the target station is to convert the high-energy proton beam from the accelerator into low-energy neutron beams with the greatest possible efficiency.

2.2 Target Systems overview

Key target station subsystems deliver this main functionality. A first group consists of the target monolith and the components it houses. It includes the proton beam window, the rotating target wheel system, the moderator-reflector assembly and the beam extraction system. A second group is made up of fluid systems, including the closed cooling circuits and the radioactive gaseous effluents and confinement (RGEC) system.

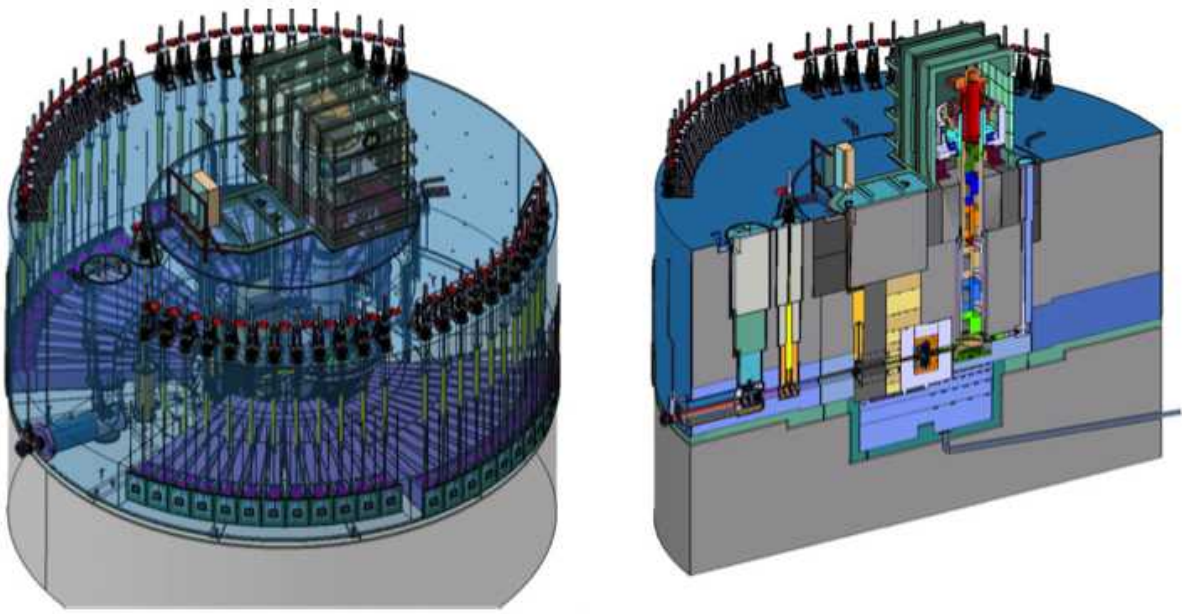

Figure 1: Monolith general layout. Left: 3D perspective view. Right: Side view along the vertical plane of the incident proton beam.

2.3 Radioactive Materials Handling purpose

The main function of the Radioactive Materials Handling is to enable temporary storage and possible conditioning of a radioactive component before its transfer to a tier permanent waste repository centre. In this respect, the subsystems of the Radioactive Materials Handling transport, exchange, maintain, process, package, store and transfer to the Site Infrastructure the used radioactive components from the ESS operation.

2.4 Radioactive Materials Handling overview

The Radioactive Materials Handling includes the handling and logistics subsystems for the radioactive components from the ESS operation. The subsystems of the Radioactive Materials Handling are composed of remote handling systems, casks, and cells.

3. INTERFACES SPECIFICATION

3.1 Mechanical

ESS.SyR-233	Target Systems shall deliver radioactive material to Radioactive Materials Handling.
ESS.SyR-359	Radioactive Materials Handling shall receive radioactive material from Target Systems.

3.2 Radiations

ESS.SyR-233	Target Systems shall deliver radioactive material to Radioactive Materials Handling.
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