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## Progress on the Design Development for Hard Core Components (HCC) for ITER Diagnostic System

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The hard core component (HCC) is defined for each undesirable situation with cliff-edge effects, defined as: 1) Dose to population above 10 mSv

2) Contamination of the ground water

3) High radiation field which avois long term human intervention on the site.

Such structure system components (SCCs) are designed to prevent these situations, as well as to return to and maintain a safe state in the event such a situation occurs.

Only 2 hard core situations can really lead to cliff edge effect unless HCC's are implemented to limit the consequences: Extreme Earthquake (SL-3) and multiples fire in tritium building initiated by SL-3.

All penetrations from zone 1 (Gallery) to zone 2(defined as NBI cell+Port Cell+VVPSS+vault) are HCC's. Either all the penetrations from the external into the building (no matter where) are HCC's

Design Status of the HCC penetrations belong to the USITER Diagnostics System will be presented in this manuscript.

The analysis for the HCC will follow RCC-MR design code (Elastic analysis route) and Level D criterion to demonstrate the integrity and stability of the components for stress test scenario. In case the elastic analysis is found too conservative a limit analysis will be proposed.

## Eligible for student paper award?

No

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