Proposal for PSB H^- Injection Review

- ## Proposed Dates

  1.5 Days in week 07-13 November 2011

- ## Organisation

  C. Cazenoves B. Goddard J. Borburgh K. Hanke W. Weterings

- ## Review committee members

Name	Institute	Expertise
Chris Warsop	*RAL/ISIS*	*H- injection and beam dynamics*
Dean Adams	*RAL/ISIS*	*H- systems and simulations*
Mike Plum	*ORNL/SNS*	*H- systems, foils and instrumentation*
Davide Tommasini	*CERN/TE*	*magnets*
Paul Cruikshank	*CERN/TE*	*Vacuum systems*
Izumi Sakai	*JPARC/RCS*	*H- injection*
Michael Benedikt	*CERN/BE*	*PSB, other machines*
Winfried Barth	*GSI*	*H- systems, foils and instrumentation*

- ## Tentative Schedule

  Day 1

  9:00h – 12.00h - Presentations

  12:00h – 13.30h – Lunch Break

  13:30h – 15.00h – Presentations

  15:30h – 17.00h – Questions by Reviewers, and discussions with experts

  Evening – Dinner

  Day 2

  9:00h – 12.00h – Review panel discussion, conclusions and recommendations

- ## Invitation

K. Hanke	***PBU Work-Package holders***	***TE-ABT Work-Unit holders***	
Bettina Mikulec	***Vivien Raginel***	***Paul Collier***	***Roberto Saban***
David Nisbet	***Volker Mertens***	***Chiara Bracco***	***Roland Garoby***
Malika Meddahi	***Christian Carli***	***Roberto Losito***	***Rhodri Jones***

- ## Subjects and topics to be treated

  Presentation of overall system and concept;

  - Layout, apertures and margins;
  - Possible issues with foil inside machine acceptance after the fall of the KSW injection painting bump.

  Chicane dipoles and powering;

  - Do we have to use ceramic chambers or could undulated chambers be used.
  - Integration of H- dump and monitoring – potential issues

- Powering scheme and bump closure flexibility
- Compensation scheme for edge focussing
- How to simulate imperfections (multi-polar components, eddy current effects with corrugated chambers, etc.)

Beam instrumentation;

- foil inspection, BTV screen, dump current monitor
- BLMs and turn-by-turn profile measurement
- Is proposed instrumentation sufficient?

Painting, injection matching, emittances and beam dynamics;

- KSW requirements and flexibility
- Vertical painting – can we live without it (e.g. optical matching and mismatching at the injection point)?
- Longitudinal painting and dispersion matching – impact on injection system
- Injection steering, where to move the magnets

Paining kickers and powering;

- Specifications and expected performance

Beam losses;

- From foil processes
- From H- stripped in injection line (residual gas, magnetic fields, …)
- Expected activation levels

Injection foils and handing system;

- Validation of prototype concept;
- Foil types, lifetimes, quantity and handling;
- Motorisation and control;

Commissioning strategy and timeline

- Risks and contingency
- Possible problem areas
- Any mitigation possible?