

Comments from Alberto Martinez De Orueta

- We received the following documentation from Paul concerning the BRAN installation:
 - Drawings of the BRAN fixture
 - Calculation of the lower assembly of the BRAN fixture
 - Procedures for the BRAN installation
- My conclusions and position after analysing the documents is the following:
- BRAN fixture: The drawings and the calculation sent seem to proof the capability of the fixture to handle the load without permanent deformation. The stresses on the lower assembly remain low (56MPa) under the emergency removal load case (which seems to be the more demanding). No calculation has been sent from the upper assembly of the fixture.

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- The new fixture is considered as a lifting accessory and therefore it has to be submitted to commissioning tests before putting into service (according to the CERN regulation for mechanical equipment: SR-M and GSI-M1). These tests consist of:
 - Static test under Normal lifting conditions: Load = $1.5 \times \text{nominal load} = 1.5 \times 45 \text{ kg}$; Duration 15 minutes > No permanent deformation in the fixture should occur.
 - Static test under Emergency removal conditions: Load = $1.5 \times \text{nominal load} = 1.5 \times 45 \text{ kg}$; Duration 15 minutes > No permanent deformation in the fixture should occur.
- The main aim of these tests is to proof the mechanical strength of the fixture. In order to ease the preparation and execution of the tests they can performed at any location, for example in the surface. They should be done with a dummy load of quite similar conditions to the BRAN if possible.
- Procedures: They seem acceptable from a mechanical safety point of view. I would like to have some feedback from Radioprotection and Transport before performing the procedures tests. These tests should be done in the tunnel under normal operating conditions.