

Wednesday 28 June 1995

K. Reece

RCC

Minutes of meeting: Radiation Safety Committee

Date: Wednesday 28 June 1995

Present: D. Beavis, H. Brown, I.H. Chiang, J. Durnan, A. Etkin, W. Glenn, R. Heyder, D. Lazarus, E. Lessard, D. Lowenstein, A. McGeary, S. Musolino, K. Reece, C. Schaefer, J. Spinner, W. MacKay.

Subject(s): Overview of RHIC - ATR Commissioning: W. MacKay.

The presentation by W. MacKay was prompted by a memorandum (Reece, 31 May 1995) to the RSC noting issues to be addressed. Pertinent items from this memorandum include;

1. Already reviewed and approved by the RSC, (ref. RSC minutes):
 1. Shielding design for U, upstream V (including blockhouse), W, X and Y lines.
 2. The list of areas that require sweep procedures.
 3. Heavy ion fault study locations.
 4. Chipmunk locations.
 5. The process of accessing an area while on Controlled Access.

2. Other items include;
 1. Redundancy of the PLC system.
 2. Dual critical devices, each of which mitigates the beam fault.
 3. redundant u-switches on each access door.
 4. "Fail-safe" design (e.g. loss of power = safe state).
 5. Functional testing of the system will be done using approved procedures.

Comments from meeting discussion: [Many items are addressed in the "handout" from W. MacKay (attached) distributed at the meeting].

1. The final "as built" shielding drawings for the AGS/ATR interface and U, V, W, W & Y beamlines will be ready for review and approval by the end of July. [Reece, Phillips, Robinson, MacKay, H. Brown].
2. UGE1 (FEB gate#1) will have an outer labyrinth in place including an outer door with either a "256" or "0" key for access.

3. UGE1 (FEB gate#1) curved labyrinth may not provide adequate attenuation for a point loss of even the 1×10^9 Gold ions; the use of an interlocking chipmunk is recommended at UGE1 (inner security gate) as part of the RSC check-off list (RHIC/ATR-CK-01).

4. A calculation of this curved labyrinth attenuation (attached) suggests this labyrinth to be inadequate for heavy ion operation without the addition of an interlocking chipmunk, (Lessard). Fault studies of both the inner gate (UGE1) and the outer labyrinth door should be done (RHIC/ATR-CK-02) and extrapolated to high intensity proton operation (g-2).

5. The expected beam intensity for ATR commissioning should be 1×10^8 Gold ions per bunch with one bunch per AGS cycle (~ 3.2 seconds) extracted.

6. Sweep Procedures have been defined as to the separation into areas;

1. U + upstream W.
2. downstream W + X&Y.
3. g-2 blockhouse (V target + V primary).

The Personnel Safety System (PSS) has the necessary restrictions for "areas secured" to allow beam into specific beamlines. Detailed sweep procedures are being written (MacKay, Zaharatos, Ingrassia).

7. The effective attenuation of the W-wall will be measured in a fault study using chipmunks on either side of the wall. Shielding around this pipe must be completed for the commissioning (RHIC/ATR-CK-03).

8. The "old gate#5" area is isolated from the remainder of the ATR tunnel by a corrugated aluminum wall. The present proposal for this commissioning is to procedurally;

1. take credit for the corrugated aluminum wall as a complete barrier.
2. sweep the gate#5 area.
3. LOTO the gate#5 and/or secure the gate in a semi-permanent manner.

Note: This proposal is acceptable from a Life Safety perspective also, (review by J. Levesque - attached).

9. The effort necessary to include instrument and include gate#5 in the PSS at some later date will be estimated, (Heyder).

10. The old muon beam dump (downstream of the old horn in the gate#5 area) shielding must be reviewed if modified from present configuration (RHIC/ATR-CK-04).

11. The beam loss monitors (BLM's) in the ATR beamline may be moveable (with sufficient notice) to help localize faults during fault studies.

12. Fault studies of the X&Y arcs should include chipmunk measurements at the entrance and exit of one of the arcs to measure the arc attenuation. If no signal is seen at the exit gate, this chipmunk should be moved upstream (@ the 45° location) and the study repeated.

13. 24 hour per day Health Physics coverage will be required when the ATR commissioning is in progress, (R. Miltenberger).

14. The standing RSC/RHIC sub-committee has reviewed and responded to the PSS External

Review. The external review found that the PSS was acceptable for radiation/personnel safety.

15. If the "analog gate" system fails in a manner that would not permit the AGS to operate for HIP (w/o ATR commissioning), a clear "fall-back" method must be defined, (Frankel, McGeary, Reece, Etkin).

16. The frequency of the strobe lights to indicate "beam imminent" must be reviewed from the perspective of possibly initiating seizures, (Durnan).

17. The serial contactors used to redundantly assure that UD1&2 is OFF must actually use the mechanical switch in each (not simply a PLC command), (Penzick, Soukas).

18. FEB gate#3 shield door (6' heavy concrete equivalent) must be in place (RHIC/ATR-CK-05).

19. Pulsed radiation estimate (Reece) of the Gate#3 shield door and the adjacent labyrinth suggest the area should be within compliance; the use of an interlocking chipmunk at the Gate#3 labyrinth "man-door" may be required (RHIC/ATR-CK-06).

cc:	RSC file	R. Frankel
	A. Penzick	A. Soukas
	R. Zaharatos	D. Phillips
	P. Ingrassia	T. Robinson

Attachments - File Only