Items for ACS upgrade 5/17/2016

1). Booster Main Magnet Power Supply Interfacing

Both “A” Div. and “B” Division will have 6 isolated contact closures for enabling the Booster Main Magnet power supply (as well as required Vertical Quads Tune/Horizontal Quad Tune and Low Field Quad Trims). Need determination on where these go to in Booster system. Status Readback(s) are can be 2 read back signals. Need determination on where they come from in the Booster system.

2). Vertical Quad Tune/ Horizontal Quad Tune/ Low Field Quad Trim Interfacing

Both “A” Div. and “B” Division will have isolated contact closures for enabling the Vertical Quads Tune/Horizontal Quad Tune and Low Field Quad Trims. Need determination on where these go to in Booster system. Status Readback(s) of the Vertical Quads Tune/Horizontal Quad Tune and Low Field Quad Trims are currently not in the Booster Relay system, and they are not planned for the new system.

3). 914 Booster Backleg Windings Interfacing

Both “A” Div. and “B” Division will have isolated contact closures for enabling the Booster Backleg Windings. Interfacing will take place at the 914 Backlegs Windings rack. Status Readback(s) of the Booster Backleg Windings are currently not in the Booster Relay system, and they are not planned for the new system.

4). DH1 Power Supply Interfacing

Only “A” Division will have a single isolated contact closure for enabling the DH1 Power Supply. Interfacing will take place at the 930 upper equipment bay. Status Readback of the DH1 Power Supply, is a single signal (like the current system) into the “A” Division.

5). Booster E-Stop to RF Power Interfacing

This is in the current system and will not be retained in the new system at the request of the RF Group.

6). NSRL to Booster Beam Stops Interfacing

The New Booster system will get the Booster Beam Stop (Permit) Enable signal, like the existing relay system. These signals will be in-line with all beam stops (ETB, LTB, and TTB) which will only enable the Beam Stops if NSRL Zone #3 is swept and in NA. This interfacing will take place in the NSRL cabinet in 914.

7). NSRL UCA to Booster Beam Stops Interfacing

The New Booster system will get the Booster Beam Stop UCA Open like the existing relay system. These signals will be in-line with all beam stops (ETB, LTB, TTB) and they will open when NSRL Ops calls for auto-open. This interface will take place in the NSRL Peer Cabinet in 911B Server Room.

8). Booster Beam Stops to NSRL Interfacing

The existing NSRL Peer will get the signals from Booster as Booster Safely Off, this will incorporate all Beam Stops Closed or Booster Main Magnet Power Supply Off and ETB Vacuum valve closed or C3 inflector PS disabled(need decision for second device) (brought into NSRL "A" Div. and NSRL "B" Div. where LTB Closed signals are currently). There will be no signal to NSRL for Beams Stops Open (It is not used in current programs). This interfacing will take place in the NSRL cabinet in 914.

9). B15 Current Transformer Interfacing

The existing B15 Current Transformers signals will be brought into new AGS IO's and transferred to Booster (Produced and Consumed Safety Tags). Both current transformers signals will be given to both "A" Div. and "B" Div. of AGS. If F6/DH2-3 are Enabled and U Line is in NA, the signals will be given to Booster to disable LTB Beams Stops Only. These signals will be latched in the AGS system. This interfacing is taking place in B18 AGS House with AGS I/Os at C18 AGS House.

10). B6 Water Flow Switch

The B6 Water Flow Switch is currently interlocked with both A and B chains of Beam Stops for the Booster Relay system. The existing B6 Water Flow Switch will be wired into the new Booster System and will disable ETB, LTB and TTB Beam Stops. This is counter to the RSC Minutes which recommended the B6 in a new MPS system (need clarification). This interfacing will take place in the NSRL cabinet in 914.

11). D3 Water Flow Switch

The D3 Water Flow Switch is currently interlocked with both A and B chains of Beam Stops for the Booster Relay system. This is currently wired into a relay in the 930A Area of Booster. This will not be incorporate into the new Booster System and will be left for a MPS system (see RSC Minutes May 6, 2015 – issued June 17, 2015).

12). LTB Water Flow Switch

The LTB Water Flow Switch is to be wired into the new LINAC ACS and interlock with the LEBT Beam Stops.

13). Key Tree

As of now the Key Tree design is a Locking Cabinet whose unlock is enabled by Controlled Access and the Operator in MCR. Entrant presents BNL badge at Key Tree RFID and if identified as training OK, the Booster Key Tree Locking Cabinet's door is unlocked. Entrant removes a single key (the keys are not individually locked). The locking Cabinet's Door is closed and relocked. The next Entrant presents BNL badge opens door and removes single key. Each of the Keys has a Plastic Card on it, with a large identifiable "B" on it. MCR Operator gives a remote release to the Booster Entry Gate. All entrants hold up Identifying Key on entering. On exiting, MCR Operator gives a remote release to the Booster Entry Gate. Entrant presents BNL badge at Key Tree RFID, the Key Tree's Locking Cabinet's door is unlocked. Entrant returns his key. The locking Cabinet's Door is closed and relocked. Next Entrant presents BNL badge at Key Tree RFID, the Key Tree's Locking Cabinet's door is unlocked. Entrant returns his key. The locking Cabinet's Door is closed and relocked. There will be checks for faults that the MCR Operator will have to acknowledge, like Door Opened 2 Keys removed, Door Opened no key removed, key removed – door not closed, etc.