

Vault/Area: S3 vault  
 Coordinator: Jorge Pereira  
 Manager: Antonio Villar  
 Last update: Oct-20

Standard Configuration

| System                                   | Subsystem   | Subsystem   | Model (number)   | Location                          | Spare available?    | Model                                       | Location Spare                 | Responsible Organizational Unit                             |                                   |  |
|--|---|---|--|-----------------------------------|---------------------|---|--------------------------------|---|-----------------------------------|--|
| Magnets                                  | Analysis line diodes<br>Analysis line quadrupoles triplets<br>Analysis line quadrupoles doublets<br>Analysis line steerers<br>Spectrocrunch quadrupoles<br>Spectrocrunch diodes<br>Spectrocrunch septupoles   | 1000DS 1020DS 1200DS 1220DS   | S800 NSCL (4)  | S3                                | no                  |   |                                | LAB FRIB ESD MagnetSvs                                      |                                   |  |
|  |   | 1191TA1193TB,190TC,1009TA,1210TB,1211TC,1210TA,1177TC,1210TH,1233TA,1234TA  | S800 Triplet (5), 15 quadrupoles   | S3                                | no                  |   |                                | LAB FRIB ESD MagnetSvs                                      |                                   |  |
|  |   | NSCL 10100 (4)  | NSCL Doublet (2), 4 quadrupoles  | S3                                | no                  |   |                                | LAB NSCL OPS CCF Operations MaintenanceInstallations        |                                   |  |
|  |   | 1170CH,1170DH,1231DH  | TH, S3   | S3                                | no                  |   |                                | LAB FRIB ESD MagnetSvs                                      |                                   |  |
| Power Supplies                           | Analysis line power supply quads<br>Analysis line diodes<br>Analysis line diodes<br>Analysis line diodes<br>Analysis line steerers PS<br>Spectrocrunch power supply quads<br>Spectrocrunch power supply sept.<br>Spectrocrunch power supply diodes<br>Spectrocrunch power supply trim coil<br>Duno switches<br>Duno V   | 1191TA,1193TB,190TC,1009TA,1210TB,1211TC,1210TA,1177TC,1210TH,1233TA,1234TA | NSCL 10100 (13)  | S3 mezzanine                      | yes                 | EMI   | S3 mezzanine                   | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | 1937A P4LTA   | SimaPH 6100 (2)  | S3 mezzanine                      | yes                 |   |                                | 1 IAR FRIB ASH FlwFrn PowerSupplies                         |                                   |  |
|  |   | 1170TA,1170TB,1194QA,1890B  | NSCL 2020 (4)  | S3 mezzanine                      | ????????            |   |                                | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | 1937A P4LTA   | NSCL 10100 (4)   | S3 mezzanine                      | yes                 |   |                                | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | 1170TH,1231DH   | Serenen DLM 20-30 (1)  | S3 mezzanine                      | yes                 |   |                                | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | 1256QA,1259OC   | NSCL 10100 (2)   | S3 mezzanine                      | yes                 |   |                                | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | 1257QB  | NSCL 2020 (1)  | S3 mezzanine                      | yes                 |   |                                | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | 1255CS,1260DS   | Invertorbox NSCL-208-209/80 (2)  | S3 basement,00                    | ????????            |   |                                | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | 1261T, 1261T  | SGA 60250  | S3 mezzanine                      | yes (2)             |   | NSCL 10250                     | S3 mezzanine  | LAB FRIB ASD EkeEno PowerSupplies |  |
|  |   | 1255CS,1260DS   | NSCL   | S3 mezzanine                      | ????????            |   |                                | LAB FRIB ASD EkeEno PowerSupplies                           |                                   |  |
|  |   | NMR   | NMR probes 4<br>NMR probes 4<br>NMR probes 5<br>NMR controllers<br>NMR cryomagnets/steers<br>NMR controller TS<br>NMR cryostats<br>NMR cryostats TS<br>Rupture disk (25 psi)<br>Cryoconals<br>Cold-head 1020DS<br>Diffusion pump 1020DS<br>Compressor 1020DS<br>Diffusion pump Lower bobbin<br>Diffusion pump lower bobbin<br>Main Diffusion pump<br>Mechanical pumps<br>Pressure gauges | Spectrocrunch diodes              | Metalab (2)         | Inside Spectr. Diodes                       | no                             | Metalab   |                                   | LAB NSCL OPS CCF Operations MaintenanceInstallations |
|  |   |   |  | Spectrocrunch diodes              | Metalab (4)         | S3 above basement                           | no                             | Metalab   |                                   | LAB NSCL OPS CCF Operations MaintenanceInstallations |
| Spectrocrunch diodes                     | Metalab (4)   |   |  | Inside Spectr. Diodes             | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Analysis line diodes                     | Metalab (4)   |   |  | S3 above basement                 | no                  | Metalab                                     |                                | Operations lab  |                                   |  |
| Cryostats                                | Rupture disk (25 psi)<br>Cryoconals<br>Cold-head 1020DS<br>Diffusion pump 1020DS<br>Compressor 1020DS<br>Diffusion pump Lower bobbin<br>Diffusion pump lower bobbin<br>Main Diffusion pump<br>Mechanical pumps<br>Pressure gauges   | Analysis line diodes  | Zook   | S3                                | yes                 | Zook  | ????????                       | LAB FRIB ESD MagnetSvs                                      |                                   |  |
|  |   | Analysis line diodes  | Zook   | S3                                | yes                 | Zook  | ????????                       | LAB FRIB ESD MagnetSvs                                      |                                   |  |
|  |   | Analysis line diodes  | NSCL   | S3                                | no                  |   |                                | LAB FRIB ESD MagnetSvs                                      |                                   |  |
|  |   | Analysis line diodes  | Cromsch AL60 (1)   | S3                                | ????????            |   |                                | LAB NSCL OPS CCF Operations MaintenanceInstallations Vacuum |                                   |  |
|  |   | Analysis line diodes  | VHS-4 (1)  | S3                                | yes                 |   | VHS-4                          | Vacuum lab  |                                   |  |
|  |   | Analysis line diodes  | Cromsch CR20 (1)   | S3                                | ????????            |   |                                | LAB NSCL OPS CCF Operations MaintenanceInstallations Vacuum |                                   |  |
|  |   | Analysis line diodes  | VHS-4 (1)  | S3                                | yes                 |   | VHS-4                          | Vacuum lab  |                                   |  |
|  |   | Analysis line diodes  | VHS-4 (1)  | S3                                | yes                 |   | VHS-4                          | Vacuum lab  |                                   |  |
|  |   | Analysis line diodes  | VHS-10 (1)   | S3 mezzanine                      | yes (1)             |   | VHS-10                         | Root  |                                   |  |
|  |   | Analysis line diodes  | Miscellaneous (small-alcali type)  | S3                                | ????????            |   |                                | Miscellaneous (small-alcali type)                           |                                   |  |
|  |   | Analysis line diodes  | Miscellaneous  | S3                                | ????????            |   |                                | Miscellaneous   |                                   |  |
|  |   | Analysis line diodes  | Standard NSCL  | S3                                | yes                 |   | Standard NSCL                  | Vacuum lab  |                                   |  |
| Analysis line diodes                     | SanTom  | S3  | yes  |                                   | SanTom              | Root (top of cyclotron)                     |                                |   |                                   |  |
| Analysis line diodes                     | XGS 600   | S3  | yes  |                                   | XGS 600             | Root (top of cyclotron)                     |                                |   |                                   |  |
| Analysis line diodes                     | Varian  | S3  | yes  |                                   | XGS 600             | Root (top of cyclotron)                     |                                |   |                                   |  |
| Vacuum                                   | Gate valves<br>Turbo pumps<br>Cryoconal DI/D2 chamber   | Analysis line   | Standard NSCL fast beamlines   | S3 basement                       | yes (1)             | Sweeper Magnet type                         |                                | LAB NSCL OPS CCF Operations MaintenanceInstallations Vacuum |                                   |  |
|  |   | Analysis line   | 1255GV Gate valve  | S3 level                          | no                  | 1255GV                                      |                                | LAB NSCL OPS CCF Operations MaintenanceInstallations Vacuum |                                   |  |
|  |   | Analysis line   | 1255GV Gate valve  | S3 level                          | no                  | 1255GV                                      |                                | LAB NSCL OPS CCF Operations MaintenanceInstallations Vacuum |                                   |  |
|  |   | Analysis line   | S800 Focal plane chamber   | Levold MAGV 2200P                 | S3 top level        | yes (1)                                     | Levold MAGV 2200P              | Vacuum lab  |                                   |  |
|  |   | Analysis line   | R600 TP filter   | Tek-Term 1 K-10                   | S3 top level        | yes   | Tek-Term 1 K-10                | S3 west entrance  |                                   |  |
|  |   | Analysis line   | R600 TP filter   | CTI Cryo-Tor 10                   | S3 mezzanine        | yes   | APD 12 SC Cryo-tor             | S3 basement   |                                   |  |
|  |   | Analysis line   | Compressor   | CTI 9600                          | S3 mezzanine        | yes   | Sumitomo HK-8E                 | S3 basement   |                                   |  |
|  |   | Analysis line   | Roots Blower   | Pfeifer WKP 500 A                 | S3 basement         | yes   | 1255GV                         | LAB NSCL OPS CCF Operations MaintenanceInstallations Vacuum |                                   |  |
|  |   | Analysis line   | Witch pump   | Witch Sci. Mod. 1398 ("Witch-S3") | S3 basement         | yes   | 1255GV                         | LAB NSCL OPS CCF Operations MaintenanceInstallations Vacuum |                                   |  |
|  |   | Analysis line   | Piran gauges   | Granville-Phillips 275            | S3                  | yes   | Granville-Phillips 275         | Vacuum lab  |                                   |  |
|  |   | Analysis line   | Miscellaneous  | Miscellaneous                     | S3                  | yes   | Miscellaneous                  | Vacuum lab  |                                   |  |
|  |   | Analysis line   | Ion gauges   | Standard NSCL                     | S3                  | yes   | Standard NSCL                  | Vacuum lab  |                                   |  |
| Analysis line                            | Vent valves   | SanTom  | S3   | yes                               | SanTom              | Vacuum lab                                  |                                |   |                                   |  |
| Analysis line                            | Ion gauge controllers   | XGS 600 (2)   | S3 mezzanine (mezz)  | yes                               | XGS 600             | Root (top of cyclotron)                     |                                |   |                                   |  |
| Control and networks                     | Medicon cards<br>Ethernet control switches 1<br>Ethernet control switches 2<br>VME crate<br>VME cards<br>Terminal servers<br>DAO ethernet switches  | Medicon cards   | Medicon  | S3 top level                      | yes                 | Medicon                                     | ????????                       | LAB NSCL OPS Controls Operation                             |                                   |  |
|  |   | Ethernet control switches 1   | NSCL   | S3 mezzanine (mezz)               | yes                 | NSCL  | ????????                       | LAB NSCL OPS Controls Operation                             |                                   |  |
|  |   | Ethernet control switches 2   | NSCL   | S3 mezzanine (mezz)               | yes                 | NSCL  | ????????                       | LAB NSCL OPS Controls Operation                             |                                   |  |
|  |   | VME crate   | NSCL   | S3 mezzanine (mezz)               | yes                 | NSCL  | ????????                       | LAB NSCL OPS Controls Operation                             |                                   |  |
|  |   | VME cards   | NSCL   | S3 mezzanine (mezz)               | yes                 | NSCL  | ????????                       | LAB NSCL OPS Controls Operation                             |                                   |  |
|  |   | Terminal servers  | Miscellaneous: oas bottle scales, S800 oas   | S3                                | yes                 | Moza, Lantronix                             | ????????                       | LAB NSCL OPS Controls Operation                             |                                   |  |
|  |   | DAO ethernet switches   | Juniper  | S3 top (west balcony)             | yes                 | Juniper                                     | ????????                       | LAB FRIB BSD BusinessIT S                                   |                                   |  |
|  |   | DAO ethernet switches   | Juniper  | S3 top (west balcony)             | yes                 | Juniper                                     | ????????                       | LAB FRIB BSD BusinessIT S                                   |                                   |  |
|  |   | DAO ethernet switches   | Juniper  | S3 top (west balcony)             | yes                 | Juniper                                     | ????????                       | LAB FRIB BSD BusinessIT S                                   |                                   |  |
|  |   | DAO ethernet switches   | Juniper  | S3 top (west balcony)             | yes                 | Juniper                                     | ????????                       | LAB FRIB BSD BusinessIT S                                   |                                   |  |
|  |   | DAO ethernet switches   | Juniper  | S3 top (west balcony)             | yes                 | Juniper                                     | ????????                       | LAB FRIB BSD BusinessIT S                                   |                                   |  |
|  |   | Detectors   | CRDCs  | Assembled Detectors               | NSCL S800 CRDC (2)  | S800 Focal plane (mezz)                     | yes (2)                        | S800 CRDC fully assembled                                   | Detector Lab                      | LAB NSCL OPS CCF Operations DetectorSystems          |
| Component: PPTA windows                  | NSCL S800 CRDC (2)  |   |  | S800 Focal plane (mezz)           | yes                 | NSCL S800 CRDC (2)                          | Detector Lab                   | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: STAR cards                    | STAR (16)   |   |  | S800 Focal plane                  | yes                 | STAR  | S3 base cabinet, ATTPC cabinet | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: read readout                  | NSCL S800 interface boards (2)  |   |  | S800 Focal plane                  | yes                 | NSCL S800 interface boards                  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: STAR cards                    | STAR (16)   |   |  | S800 Focal plane                  | yes                 | STAR  | S3 base cabinet, ATTPC cabinet | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: interface boards              | NSCL S800 interface boards (2)  |   |  | S800 Focal plane                  | yes                 | NSCL S800 interface boards                  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: Presamplers                   | NSCL S800 interface boards (2)  |   |  | S800 Focal plane                  | yes                 | NSCL S800 interface boards                  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: Cable STAR/interface boards   | NSCL S800 interface boards (2)  |   |  | S800 Focal plane                  | yes                 | NSCL S800 interface boards                  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: Flat ribbon cable (fastlines) | 32 flat-ribbon  |   |  | S800 Focal plane (mezz)           | yes                 | 32 flat-ribbon                              | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: Flat ribbon cable (fastlines) | 32 flat-ribbon  |   |  | S800 Focal plane (mezz)           | yes                 | 32 flat-ribbon                              | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: Flat ribbon cable (fastlines) | 32 flat-ribbon  |   |  | S800 Focal plane (mezz)           | yes                 | 32 flat-ribbon                              | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: Flat ribbon cable (fastlines) | 32 flat-ribbon  |   |  | S800 Focal plane (mezz)           | yes                 | 32 flat-ribbon                              | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| E1 scintillator                          | High voltage anode<br>Voltage CRDC and<br>Steeper motor/50k cables<br>CRDC Drives<br>Controller stepper motor<br>Chiller<br>Innovation Chamber  | High voltage anode  | NIM hin  | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | High voltage anode  | NSCL   | S3 top (Wiemer crate)             | no                  | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Hodoscope                                | Assembled detector<br>Component: STAR cards<br>Component: PMTs<br>Component: Base/voltage dividers<br>Component: cable HV<br>Component: cable signals inside chamber<br>Component: cable signals outside chamber<br>Assembled detector 1-mm<br>Assembled detector 5-mm (thick)<br>Component: Frame<br>Component: Scintillator layer<br>Component: Light guides<br>Component: PMTs<br>Component: base/voltage dividers<br>Assembled detector<br>Component: STAR cards<br>Component: PMTs<br>Component: Base/voltage dividers<br>Component: cable HV<br>Component: cable signals inside chamber<br>Component: cable signals outside chamber<br>Assembled detector 1-mm<br>Assembled detector 120-um<br>Component: 120-um BC404<br>Component: Frame<br>Component: PMT<br>Component: base/voltage divider | Assembled detector  | NSCL Hodoscope   | S3 top (Wiemer crate)             | yes                 | NSCL Hodoscope                              | 1107_Detector Lab: Lenda lab   | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: STAR cards   | STAR (16)  | S800 Focal plane                  | yes                 | STAR  | S3 base cabinet, ATTPC cabinet | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: PMTs   | NSCL   | S3 top (Wiemer crate)             | yes                 | NSCL  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: Base/voltage dividers  | NSCL   | S3 top (Wiemer crate)             | yes                 | NSCL  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: cable HV   | NSCL   | S3 top (Wiemer crate)             | yes                 | NSCL  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: cable signals inside chamber                                     | NSCL   | S3 top (Wiemer crate)             | yes                 | NSCL  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: cable signals outside chamber                                    | NSCL   | S3 top (Wiemer crate)             | yes                 | NSCL  | S3 base cabinet                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Assembled detector 1-mm   | S800 OBJ 1-mm  | A1900 lab (cabinet)               | yes                 | S800 OBJ 1-mm                               | A1900 lab (cabinet)            | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Assembled detector 120-um   | S800 OBJ 120-um  | A1900 lab (cabinet)               | yes                 | S800 OBJ 120-um                             | A1900 lab (cabinet)            | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: 120-um BC404   | S800 OBJ 120-um  | A1900 lab (cabinet)               | yes                 | S800 OBJ 120-um                             | A1900 lab (cabinet)            | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: Frame  | S800 OBJ 120-um  | A1900 lab (cabinet)               | yes                 | S800 OBJ 120-um                             | A1900 lab (cabinet)            | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: PMT  | S800 OBJ 120-um  | A1900 lab (cabinet)               | yes                 | S800 OBJ 120-um                             | A1900 lab (cabinet)            | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Component: base/voltage divider          | S800 OBJ 120-um   | A1900 lab (cabinet)   | yes  | S800 OBJ 120-um                   | A1900 lab (cabinet) | LAB NSCL OPS CCF Operations DetectorSystems |                                |   |                                   |  |
| Intermediate-Innate delay PPAcs          | Assembled detectors<br>Component: falls<br>Component: Frame<br>Component: 2-station preamps<br>Component: coax cables<br>Component: delay lines<br>Component: Low voltage supply  | Assembled detectors   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: falls  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: Frame  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: 2-station preamps  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: coax cables  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: delay lines  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: Low voltage supply   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Assembled detectors   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: falls  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: Frame  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: 2-station preamps  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Component: coax cables  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Gas Handling system S800 FP              | Pressure transducers<br>Mass flow controls<br>Gas controller<br>Filters<br>Solenoid valves<br>Needle valves<br>Piran<br>Gas<br>Pump   | Pressure transducers  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Mass flow controls  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Gas controller  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Filters   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Solenoid valves   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Needle valves   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Piran   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Gas   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Pump  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Pressure transducers  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Mass flow controls  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Gas controller  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Gas Handling system S800 II              | Pressure transducers<br>Mass flow control<br>Solenoid valves<br>Needle valve<br>Piran<br>Pump<br>Gas<br>Pump  | Pressure transducers  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Mass flow control   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Solenoid valves   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Needle valve  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Piran   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Pump  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Gas   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Pump  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Pressure transducers  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Mass flow control   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Solenoid valves   | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | Needle valve  | NSCL   | S3 top (west balcony)             | yes                 | NSCL  |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
| Computers                                | IsodaS5 DAQ box<br>GHS (8000r-win)  | IsodaS5 DAQ box   | IsodaS5 DAQ box  | S3 top (west balcony)             | yes                 | IsodaS5 DAQ box                             |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | GHS (8000r-win)   | GHS (8000r-win)  | S3 top (west balcony)             | yes                 | GHS (8000r-win)                             |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | IsodaS5 DAQ box   | IsodaS5 DAQ box  | S3 top (west balcony)             | yes                 | IsodaS5 DAQ box                             |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | GHS (8000r-win)   | GHS (8000r-win)  | S3 top (west balcony)             | yes                 | GHS (8000r-win)                             |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | IsodaS5 DAQ box   | IsodaS5 DAQ box  | S3 top (west balcony)             | yes                 | IsodaS5 DAQ box                             |                                | LAB NSCL OPS CCF Operations DetectorSystems                 |                                   |  |
|  |   | GHS (8000r-win)   | GHS (8000r-win)</  |                                   |                     |   |                                |   |                                   |  |

|           |                    |                              |   |                                      |                        |              |  |
|-----------|--------------------|------------------------------|---|--------------------------------------|------------------------|--------------|--|
|           | S3 control (cf-s3) | S3 vault control             |   |                                      |                        | S3 mezzanine | LAB.FRIB.BSO.BusinessIT.SS   |
| Utilities | AC                 | Two top S3 units             | Trane WCHD08041EJAAA1000000200<br>Trane WCHD08041EJAAA41000000200 | S3 top level<br>S3 top level         | ?????????<br>????????? |              | LAB.FRIB.CFD.Facilities<br>LAB.FRIB.CFD.Facilities                               |
|           |                    | Two basement S3              | Trane SWUB-B504-E<br>Carrier SUBRN01662<br>McQuay                 | S3 basement<br>S3 basement<br>S3 top | ?????????<br>no<br>no  |              | LAB.FRIB.CFD.Facilities<br>LAB.FRIB.CFD.Facilities<br>LAB.NSCL.EXPRESS.EqRes.MSS |
|           |                    | S800 electronics cabinet (2) |   |                                      |                        |              |  |