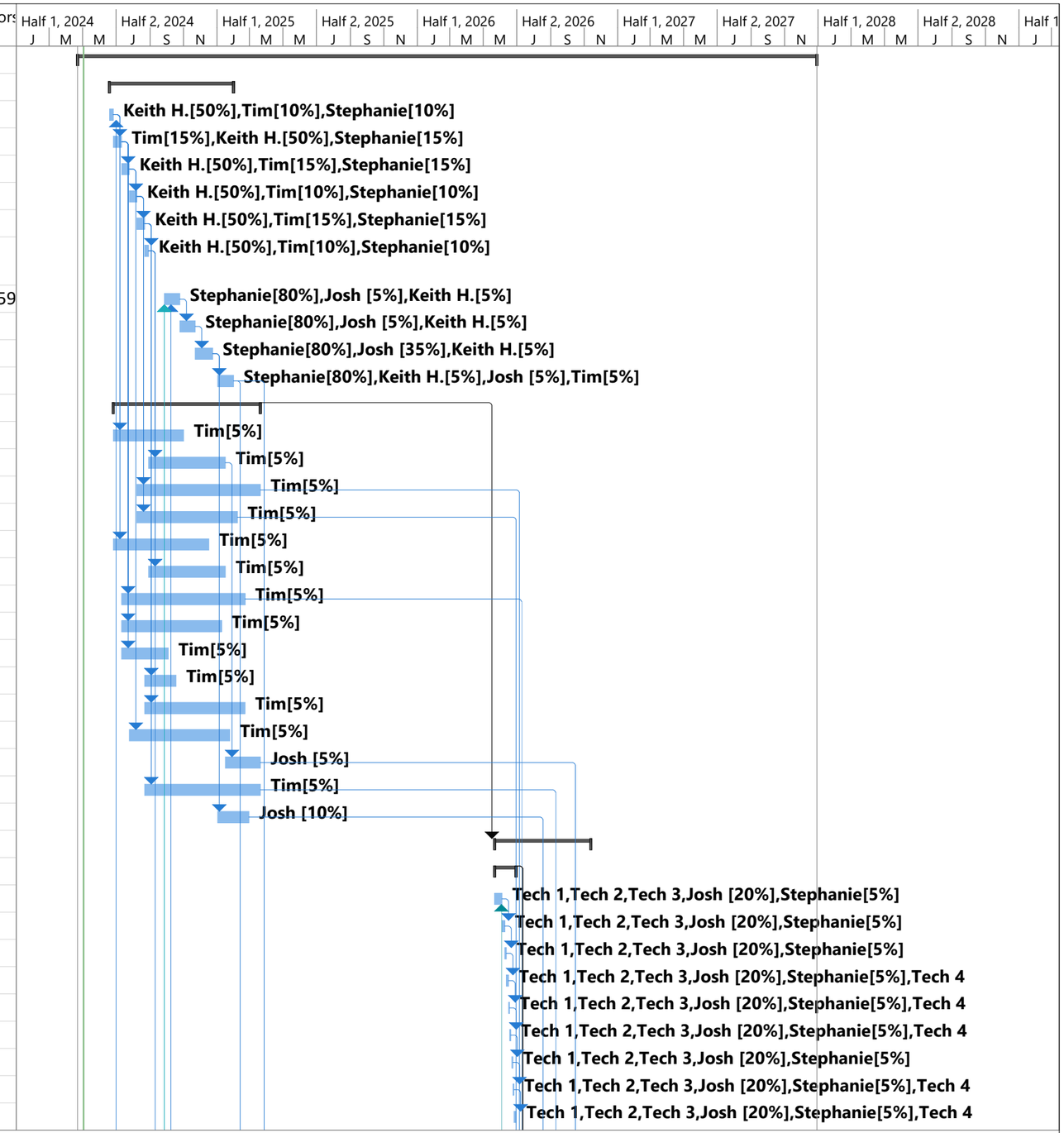
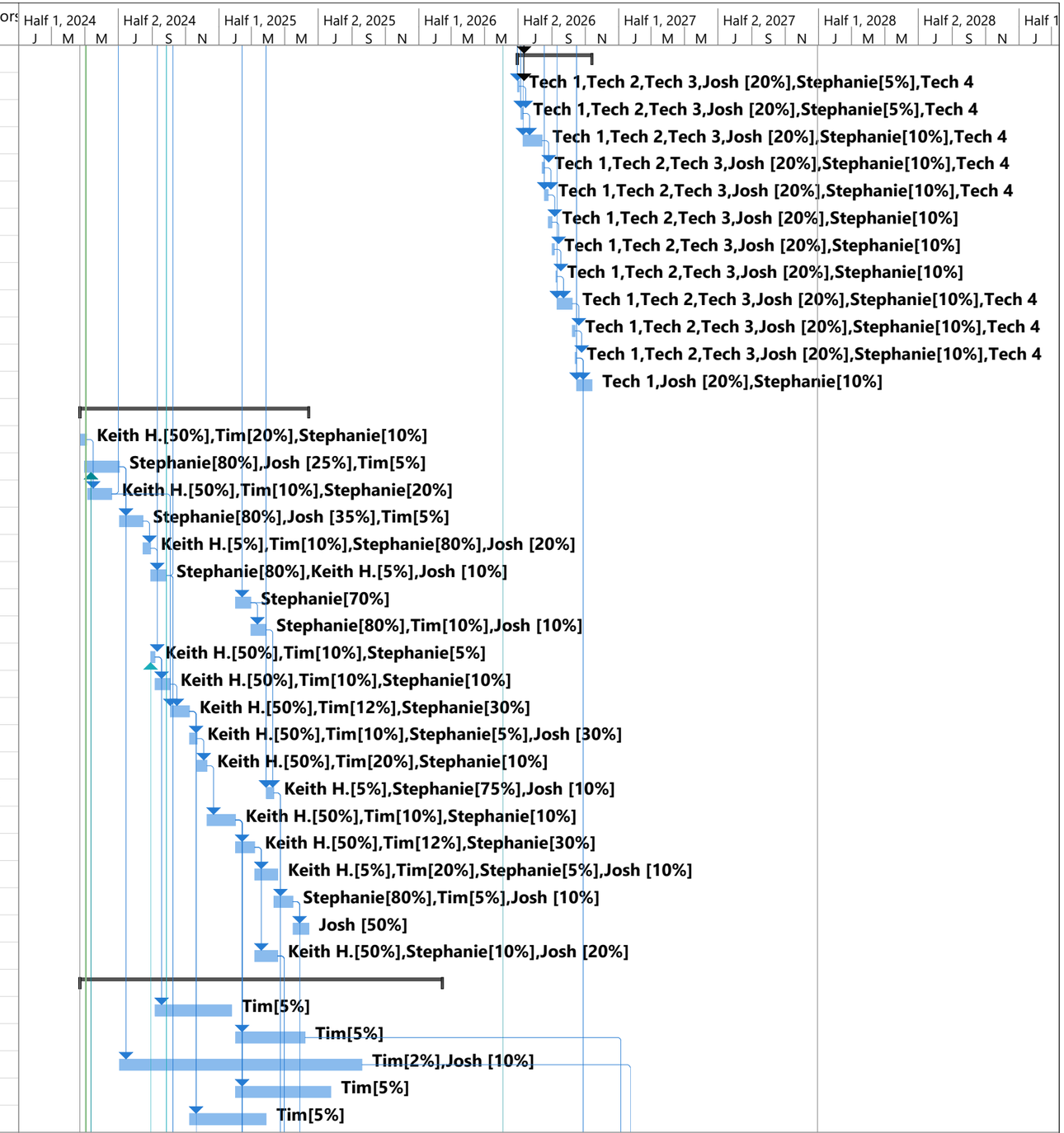
| ID | | Task Mode | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|---|---|
| 1 | | | **K-Long Design, Fabrication and Installation** | **921 days** | **Mon 4/22/24** | **Wed 12/29/27** | |
| 2 | | | **KPT Design** | **150 days** | **Wed 6/19/24** | **Thu 1/30/25** | |
| 3 | | | Berylium Target/Absorber updated drawing | 5 days | Wed 6/19/24 | Tue 6/25/24 | 56 |
| 4 | | | Target Shielding final drawings | 10 days | Wed 6/26/24 | Wed 7/10/24 | 3 |
| 5 | | | Beamline final drawings | 10 days | Thu 7/11/24 | Wed 7/24/24 | 4 |
| 6 | | | Frame/rails system final drawings | 10 days | Thu 7/25/24 | Wed 8/7/24 | 5 |
| 7 | | | Shield Wall Final drawings | 10 days | Thu 8/8/24 | Wed 8/21/24 | 6 |
| 8 | | | Beryllium and Tungsten cooling plates final drawings | 5 days | Thu 8/22/24 | Wed 8/28/24 | 7 |
| 9 | | | Profiler Final Design | 20 days | Fri 9/27/24 | Thu 10/24/24 | 168,169,59 |
| 10 | | | Active collimator final design | 20 days | Fri 10/25/24 | Thu 11/21/24 | 9 |
| 11 | | | Cooling system final drawings/control specs | 20 days | Fri 11/22/24 | Mon 12/23/24 | 10 |
| 12 | | | Final Installation Drawings | 20 days | Thu 1/2/25 | Thu 1/30/25 | 11 |
| 13 | | | **KPT Procurements** | **180 days** | **Wed 6/26/24** | **Thu 3/20/25** | |
| 14 | | | Berylium Target | 90 days | Wed 6/26/24 | Thu 10/31/24 | 3 |
| 15 | | | Berylium target cooling/containment shrouc | 90 days | Thu 8/29/24 | Wed 1/15/25 | 8 |
| 16 | | | Support Structure | 150 days | Thu 8/8/24 | Thu 3/20/25 | 6 |
| 17 | | | Rail system/rollers | 120 days | Thu 8/8/24 | Thu 2/6/25 | 6 |
| 18 | | | Tungsten Absorber | 120 days | Wed 6/26/24 | Mon 12/16/24 | 3 |
| 19 | | | Absorber cooling plates | 90 days | Thu 8/29/24 | Wed 1/15/25 | 8 |
| 20 | | | Target lead shielding | 150 days | Thu 7/11/24 | Thu 2/20/25 | 4 |
| 21 | | | Target Borated Poly Shielding | 120 days | Thu 7/11/24 | Wed 1/8/25 | 4 |
| 22 | | | Aluminum filler tubes | 60 days | Thu 7/11/24 | Thu 10/3/24 | 4 |
| 23 | | | Concrete shield walls | 40 days | Thu 8/22/24 | Thu 10/17/24 | 7 |
| 24 | | | Lead Shield walls | 120 days | Thu 8/22/24 | Thu 2/20/25 | 7 |
| 25 | | | Vacuum Beamline components and support | 120 days | Thu 7/25/24 | Thu 1/23/25 | 5 |
| 26 | | | PLC components | 45 days | Thu 1/16/25 | Thu 3/20/25 | 15 |
| 27 | | | Lead Shield Wall Supports | 140 days | Thu 8/22/24 | Thu 3/20/25 | 7 |
| 28 | | | Cooling system components | 40 days | Thu 1/2/25 | Thu 2/27/25 | 11 |
| 29 | | | **KPT Installation** | **122 days** | **Fri 5/22/26** | **Thu 11/12/26** | **13** |
| 30 | | | **Remove equipment from Collimator** | **26 days** | **Fri 5/22/26** | **Mon 6/29/26** | |
| 31 | | | Perform Shut down of existing equipmem | 8 days | Fri 5/22/26 | Wed 6/3/26 | 166 |
| 32 | | | Bleed up Vacuum and remove pumps | 3 days | Thu 6/4/26 | Mon 6/8/26 | 31 |
| 33 | | | Remove Collimator/Profiler | 3 days | Tue 6/9/26 | Thu 6/11/26 | 32 |
| 34 | | | Remove permanent magnet and move to | 2 days | Fri 6/12/26 | Mon 6/15/26 | 33 |
| 35 | | | Remove 2ndary Collimator | 2 days | Tue 6/16/26 | Wed 6/17/26 | 34 |
| 36 | | | Remove sweep magnet | 2 days | Thu 6/18/26 | Fri 6/19/26 | 35 |
| 37 | | | Remove Polarimeter | 2 days | Mon 6/22/26 | Tue 6/23/26 | 36 |
| 38 | | | Remove beamline and stands | 2 days | Wed 6/24/26 | Thu 6/25/26 | 37 |
| 39 | | | Remove/reposition Cable trays/wiring | 2 days | Fri 6/26/26 | Mon 6/29/26 | 38 |




Project: K-Long Design, Fab an
Date: Fri 5/3/24

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Task | | Project Summary | | Manual Task | | Start-only | | Deadline | |
| Split | | Inactive Task | | Duration-only | | Finish-only | | Progress | |
| Milestone | | Inactive Milestone | | Manual Summary Rollup | | External Tasks | | Manual Progress | |
| Summary | | Inactive Summary | | Manual Summary | | External Milestone | | | |

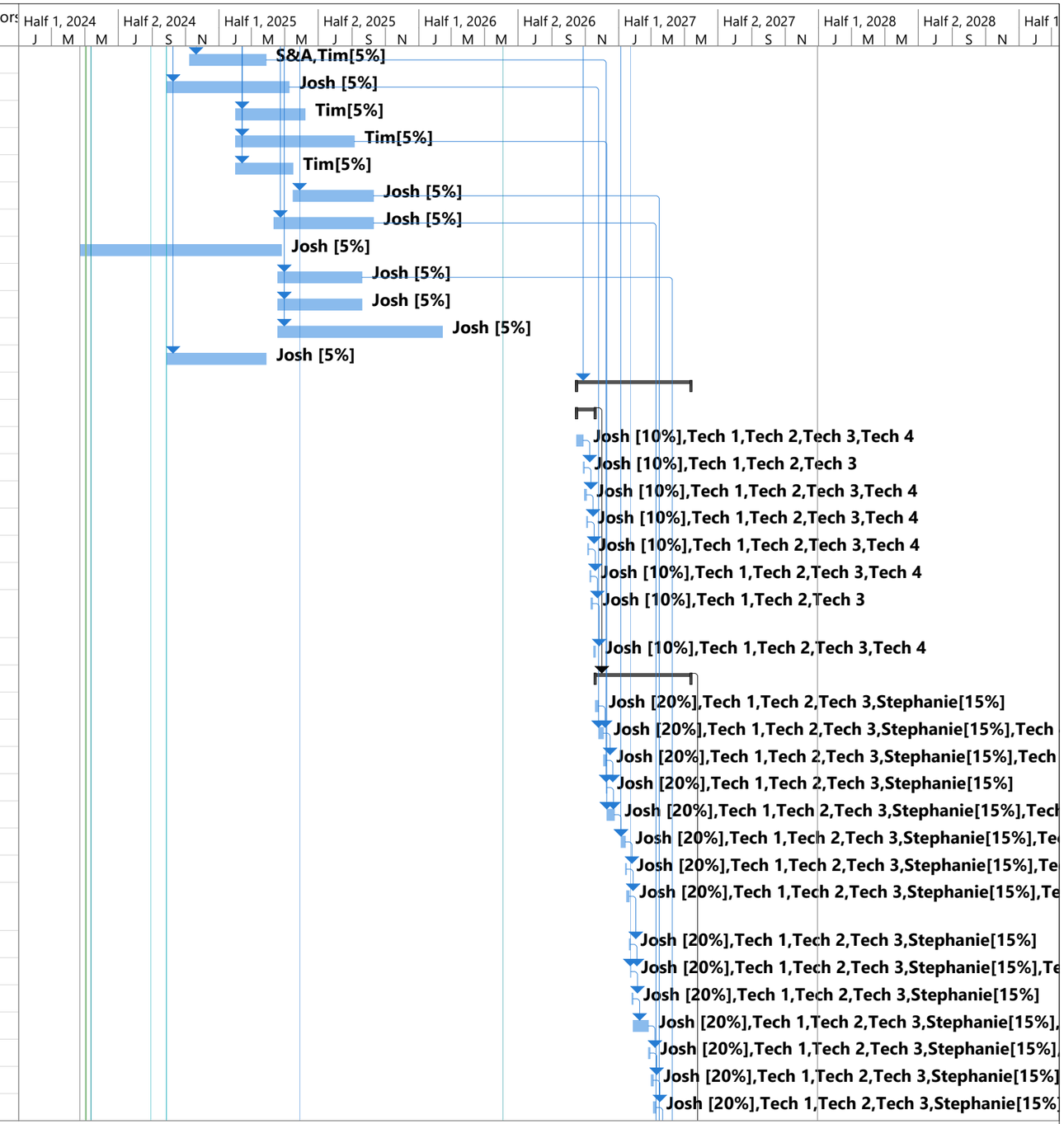
| ID | | Task Mode | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|---|---|
| 40 | | | **Install Collimator area equipment** | **96 days** | **Tue 6/30/26** | **Thu 11/12/26** | **30** |
| 41 | | | Install rails | 3 days | Tue 6/30/26 | Thu 7/2/26 | 30,17 |
| 42 | | | Install Support structure | 4 days | Mon 7/6/26 | Thu 7/9/26 | 41,16 |
| 43 | | | Install target/shielding | 25 days | Fri 7/10/26 | Thu 8/13/26 | 42,20 |
| 44 | | | Fiducialize and Align target | 2 days | Fri 8/14/26 | Mon 8/17/26 | 43 |
| 45 | | | Install cooling system/leak check | 5 days | Tue 8/18/26 | Mon 8/24/26 | 44,28 |
| 46 | | | Install Collimator/profiler | 5 days | Tue 8/25/26 | Mon 8/31/26 | 45 |
| 47 | | | Cables/trays | 4 days | Tue 9/1/26 | Fri 9/4/26 | 46 |
| 48 | | | Test and Align collimator/profiler | 2 days | Tue 9/8/26 | Wed 9/9/26 | 47 |
| 49 | | | Install Shielding walls | 20 days | Thu 9/10/26 | Wed 10/7/26 | 48,27 |
| 50 | | | Install Permanent Magnet | 3 days | Thu 10/8/26 | Mon 10/12/26 | 49 |
| 51 | | | Install Vacuum beamline | 3 days | Tue 10/13/26 | Thu 10/15/26 | 50 |
| 52 | | | Commission Controls | 20 days | Fri 10/16/26 | Thu 11/12/26 | 51,26 |
| 53 | | | **CPS Design** | **285 days** | **Mon 4/22/24** | **Fri 6/13/25** | |
| 54 | | | Absorber Preliminary Design | 10 days | Mon 4/22/24 | Fri 5/3/24 | |
| 55 | | | Magnet final design drawings and spec | 44 days | Tue 4/30/24 | Tue 7/2/24 | 167 |
| 56 | | | "Removable de-commission" preliminary de | 30 days | Mon 5/6/24 | Tue 6/18/24 | 54 |
| 57 | | | Support Structure preliminary design | 30 days | Wed 7/3/24 | Wed 8/14/24 | 55 |
| 58 | | | Moving system development | 10 days | Thu 8/15/24 | Wed 8/28/24 | 57 |
| 59 | | | Support Structure final drawings | 20 days | Thu 8/29/24 | Thu 9/26/24 | 58 |
| 60 | | | Radiator Preliminary Design | 20 days | Fri 1/31/25 | Thu 2/27/25 | 12 |
| 61 | | | Beamline layout | 20 days | Fri 2/28/25 | Thu 3/27/25 | 60 |
| 62 | | | Final Absorber drawings | 5 days | Thu 8/29/24 | Thu 9/5/24 | 169,8 |
| 63 | | | Shielding preliminary design | 20 days | Fri 9/6/24 | Thu 10/3/24 | 62 |
| 64 | | | Removable portion final drawings | 25 days | Fri 10/4/24 | Thu 11/7/24 | 56,63 |
| 65 | | | Cooling System layout | 10 days | Fri 11/8/24 | Thu 11/21/24 | 64 |
| 66 | | | Nitrogen system layout | 10 days | Fri 11/22/24 | Mon 12/9/24 | 65 |
| 67 | | | Radiator final drawings | 10 days | Fri 3/28/25 | Thu 4/10/25 | 60,61,12 |
| 68 | | | Shielding final drawings | 30 days | Tue 12/10/24 | Thu 1/30/25 | 66 |
| 69 | | | CPS Assembly drawings | 25 days | Fri 1/31/25 | Thu 3/6/25 | 68 |
| 70 | | | CPS Assembly Procedure | 30 days | Fri 3/7/25 | Thu 4/17/25 | 69 |
| 71 | | | Final Beamline drawings | 25 days | Fri 4/11/25 | Thu 5/15/25 | 67 |
| 72 | | | Define control system | 20 days | Fri 5/16/25 | Fri 6/13/25 | 71 |
| 73 | | | Final Installation drawings | 30 days | Fri 3/7/25 | Thu 4/17/25 | 69 |
| 74 | | | **CPS Procurements** | **445 days** | **Mon 4/22/24** | **Thu 2/12/26** | |
| 75 | | | Copper Absorber | 90 days | Fri 9/6/24 | Thu 1/23/25 | 62 |
| 76 | | | Cu/W shielding | 90 days | Fri 1/31/25 | Fri 6/6/25 | 68 |
| 77 | | | Magnet | 300 days | Wed 7/3/24 | Thu 9/18/25 | 55 |
| 78 | | | Lead shielding shapes | 120 days | Fri 1/31/25 | Wed 7/23/25 | 68 |
| 79 | | | Steel support plates | 90 days | Fri 11/8/24 | Thu 3/27/25 | 64 |




Project: K-Long Design, Fab an
Date: Fri 5/3/24

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Task | | Project Summary | | Manual Task | | Start-only | | Deadline | |
| Split | | Inactive Task | | Duration-only | | Finish-only | | Progress | |
| Milestone | | Inactive Milestone | | Manual Summary Rollup | | External Tasks | | Manual Progress | |
| Summary | | Inactive Summary | | Manual Summary | | External Milestone | | | |

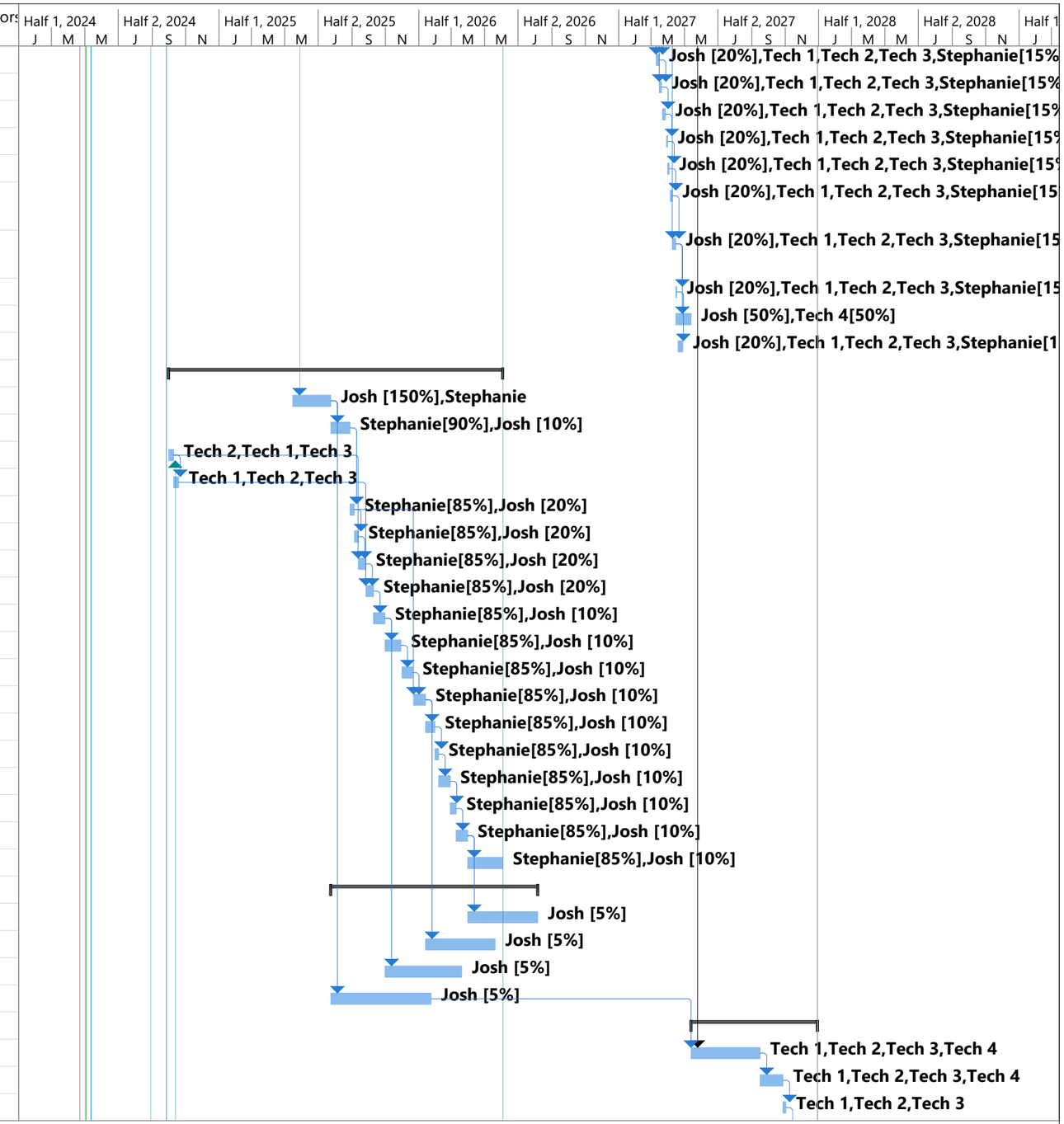
| ID | | Task Mode | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|---|---|
| 80 | | | Alignment cartridges | 90 days | Fri 11/8/24 | Thu 3/27/25 | 64 |
| 81 | | | Support structure | 150 days | Fri 9/27/24 | Thu 5/8/25 | 59 |
| 82 | | | steel shielding | 90 days | Fri 1/31/25 | Fri 6/6/25 | 68 |
| 83 | | | Heavy Concrete shielding | 150 days | Fri 1/31/25 | Thu 9/4/25 | 68 |
| 84 | | | Borated Poly shielding | 75 days | Fri 1/31/25 | Thu 5/15/25 | 68 |
| 85 | | | Beamline vacuum components | 100 days | Fri 5/16/25 | Thu 10/9/25 | 71 |
| 86 | | | Radiator components | 125 days | Fri 4/11/25 | Thu 10/9/25 | 67 |
| 87 | | | Magnet Power supply | 250 days | Mon 4/22/24 | Thu 4/24/25 | |
| 88 | | | Cooling System components | 105 days | Fri 4/18/25 | Thu 9/18/25 | 73 |
| 89 | | | Nitrogen system components | 105 days | Fri 4/18/25 | Thu 9/18/25 | 73 |
| 90 | | | Controls instrumentation | 200 days | Fri 4/18/25 | Thu 2/12/26 | 73 |
| 91 | | | Downstream shielding support structure | 120 days | Fri 9/27/24 | Thu 3/27/25 | 59 |
| 92 | | | **CPS Installation** | **139 days** | **Fri 10/16/26** | **Wed 5/12/27** | **51** |
| 93 | | | **Remove existing equipment from Tagger ar** | **24 days** | **Fri 10/16/26** | **Wed 11/18/26** | |
| 94 | | | Remove Shielding blocks at entrance | 8 days | Fri 10/16/26 | Tue 10/27/26 | |
| 95 | | | Bleed up vacuum downstream of Goniom | 2 days | Wed 10/28/26 | Thu 10/29/26 | 94 |
| 96 | | | Remove Microscope | 2 days | Fri 10/30/26 | Mon 11/2/26 | 95 |
| 97 | | | Remove Hodoscope | 2 days | Tue 11/3/26 | Wed 11/4/26 | 96 |
| 98 | | | Remove racks | 2 days | Thu 11/5/26 | Fri 11/6/26 | 97 |
| 99 | | | Remove shielding blocks | 2 days | Mon 11/9/26 | Tue 11/10/26 | 98 |
| 100 | | | Remove beamline DS of Tagger vacuum chamber | 3 days | Wed 11/11/26 | Fri 11/13/26 | 99 |
| 101 | | | Remove Permanent magnet and stands | 3 days | Mon 11/16/26 | Wed 11/18/26 | 100 |
| 102 | | | **Install CPS** | **115 days** | **Thu 11/19/26** | **Wed 5/12/27** | **93** |
| 103 | | | Clean and seal floor | 4 days | Thu 11/19/26 | Tue 11/24/26 | |
| 104 | | | Bring support base to staging area | 5 days | Wed 11/25/26 | Thu 12/3/26 | 103,81 |
| 105 | | | Test moving system | 3 days | Fri 12/4/26 | Tue 12/8/26 | 104 |
| 106 | | | Install Alignment cartridges | 1 day | Wed 12/9/26 | Wed 12/9/26 | 105,80 |
| 107 | | | Install lower shielding components | 10 days | Thu 12/10/26 | Wed 12/23/26 | 106,83 |
| 108 | | | Install Removable section | 6 days | Tue 1/5/27 | Tue 1/12/27 | 107,76 |
| 109 | | | Move dump diagnostic girder to position | 2 days | Wed 1/13/27 | Thu 1/14/27 | 108 |
| 110 | | | Test Alignment capabilities - in and out of final position | 3 days | Fri 1/15/27 | Tue 1/19/27 | 109 |
| 111 | | | Install final position location fittings | 2 days | Wed 1/20/27 | Thu 1/21/27 | 110 |
| 112 | | | Install Magnet on support stand | 1 day | Fri 1/22/27 | Fri 1/22/27 | 111,77 |
| 113 | | | Preliminary align magnet and absorber | 2 days | Mon 1/25/27 | Tue 1/26/27 | 112 |
| 114 | | | Install additional shielding | 20 days | Wed 1/27/27 | Tue 2/23/27 | 113 |
| 115 | | | Move assy into final position and align | 3 days | Wed 2/24/27 | Fri 2/26/27 | 114 |
| 116 | | | Install permanent magnet | 4 days | Mon 3/1/27 | Thu 3/4/27 | 115 |
| 117 | | | Check Alignment | 3 days | Fri 3/5/27 | Tue 3/9/27 | 116 |




Project: K-Long Design, Fab an
Date: Fri 5/3/24

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Task | | Project Summary | | Manual Task | | Start-only | | Deadline | |
| Split | | Inactive Task | | Duration-only | | Finish-only | | Progress | |
| Milestone | | Inactive Milestone | | Manual Summary Rollup | | External Tasks | | Manual Progress | |
| Summary | | Inactive Summary | | Manual Summary | | External Milestone | | | |

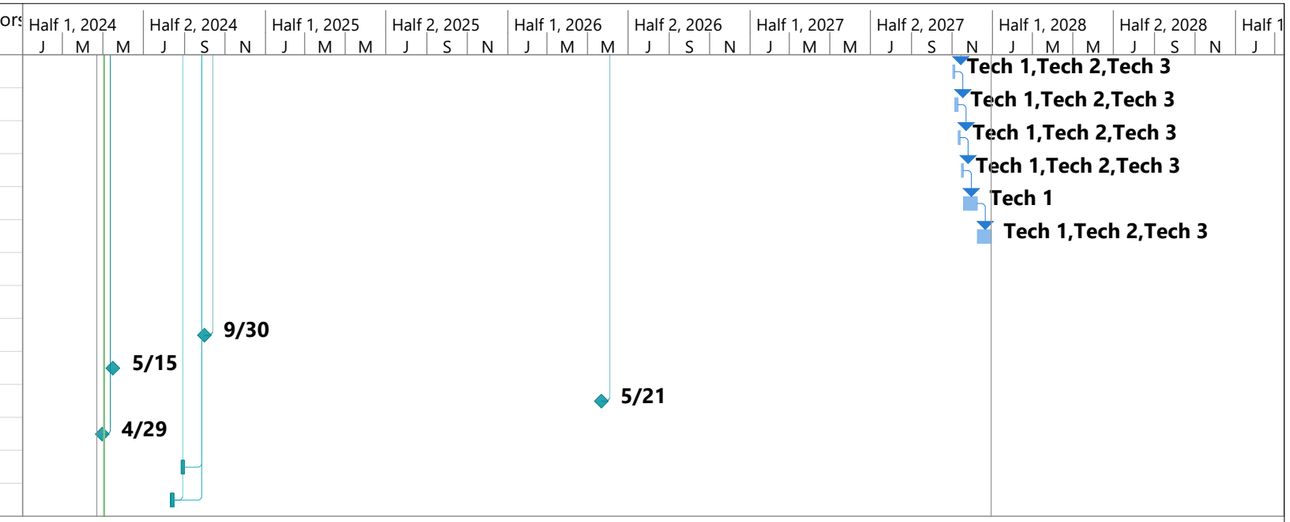
| ID | | Task Mode | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|---|---|
| 118 | | | Install Radiator and test controls | 4 days | Wed 3/10/27 | Mon 3/15/27 | 117,86 |
| 119 | | | Install Beamline and windows | 4 days | Tue 3/16/27 | Fri 3/19/27 | 118,85 |
| 120 | | | Install remaining shielding | 5 days | Mon 3/22/27 | Fri 3/26/27 | 119 |
| 121 | | | Verify Alignment | 2 days | Mon 3/29/27 | Tue 3/30/27 | 120 |
| 122 | | | Install vacuum pumps and pump down | 3 days | Wed 3/31/27 | Fri 4/2/27 | 121 |
| 123 | | | Hookup electrical and water to magnet and test | 4 days | Mon 4/5/27 | Thu 4/8/27 | 122 |
| 124 | | | Hookup cooling water to absorber and verify instrumentation | 4 days | Fri 4/9/27 | Wed 4/14/27 | 123,88 |
| 125 | | | Hookup and verify nitrogen purge | 2 days | Thu 4/15/27 | Fri 4/16/27 | 124 |
| 126 | | | Install/Test all controls | 20 days | Thu 4/15/27 | Wed 5/12/27 | 124 |
| 127 | | | Install Ramp Shielding blocks | 7 days | Mon 4/19/27 | Tue 4/27/27 | 125 |
| 128 | | | **KFM Design** | **410 days** | **Tue 10/1/24** | **Tue 6/2/26** | |
| 129 | | | Preliminary Design MRI Magnet installaion | 45 days | Fri 5/16/25 | Wed 7/23/25 | 71 |
| 130 | | | Preliminary Beamline design | 25 days | Thu 7/24/25 | Wed 8/27/25 | 129 |
| 131 | | | Assemble FPC frame in ESB | 7 days | Tue 10/1/24 | Wed 10/9/24 | 164 |
| 132 | | | Assemble FRI frame in ESB | 7 days | Thu 10/10/24 | Fri 10/18/24 | 131 |
| 133 | | | Preliminary FWC support design | 5 days | Thu 8/28/25 | Thu 9/4/25 | 130 |
| 134 | | | Preliminary FVH support design | 5 days | Fri 9/5/25 | Thu 9/11/25 | 133 |
| 135 | | | Preliminary FPC support design | 10 days | Fri 9/12/25 | Thu 9/25/25 | 134,131 |
| 136 | | | Preliminary FRI support design | 10 days | Fri 9/26/25 | Thu 10/9/25 | 132,135 |
| 137 | | | Preliminary design Start Counter mods | 15 days | Fri 10/10/25 | Thu 10/30/25 | 136 |
| 138 | | | Target mods | 20 days | Fri 10/31/25 | Fri 11/28/25 | 137 |
| 139 | | | Installation Layout | 15 days | Mon 12/1/25 | Fri 12/19/25 | 138 |
| 140 | | | Final drawings FWC | 8 days | Mon 12/22/25 | Mon 1/12/26 | 133,139 |
| 141 | | | Final drawings FPC | 12 days | Tue 1/13/26 | Thu 1/29/26 | 140 |
| 142 | | | Final drawings FVH | 5 days | Fri 1/30/26 | Thu 2/5/26 | 141 |
| 143 | | | Final drawings FRI | 15 days | Fri 2/6/26 | Thu 2/26/26 | 142 |
| 144 | | | Final Start Counter Drawings | 7 days | Fri 2/27/26 | Mon 3/9/26 | 143 |
| 145 | | | Final Beamine drawings | 15 days | Tue 3/10/26 | Mon 3/30/26 | 144 |
| 146 | | | Final Installation Drawings | 45 days | Tue 3/31/26 | Tue 6/2/26 | 145 |
| 147 | | | **KFM Fabrication/Procurements** | **257 days** | **Thu 7/24/25** | **Wed 8/5/26** | |
| 148 | | | Beamline vacuum components | 90 days | Tue 3/31/26 | Wed 8/5/26 | 145 |
| 149 | | | Support structure components | 90 days | Tue 1/13/26 | Tue 5/19/26 | 140 |
| 150 | | | Start Counter components | 90 days | Fri 10/31/25 | Thu 3/19/26 | 137 |
| 151 | | | MRI Magnet installation infrastructure | 120 days | Thu 7/24/25 | Thu 1/22/26 | 129 |
| 152 | | | **KFM Installation** | **165 days** | **Thu 5/13/27** | **Wed 12/29/27** | |
| 153 | | | Install MRI magnet infrastructure | 90 days | Thu 5/13/27 | Wed 9/15/27 | 102,151 |
| 154 | | | Install MRI magnet | 30 days | Thu 9/16/27 | Wed 10/27/27 | 153 |
| 155 | | | Install FWC Structure | 3 days | Thu 10/28/27 | Mon 11/1/27 | 154 |




Project: K-Long Design, Fab an
Date: Fri 5/3/24

| | | | | |
|---|---|---|---|---|
| Task | Project Summary | Manual Task | Start-only | Deadline |
| Split | Inactive Task | Duration-only | Finish-only | Progress |
| Milestone | Inactive Milestone | Manual Summary Rollup | External Tasks | Manual Progress |
| Summary | Inactive Summary | Manual Summary | External Milestone | |

| ID | | Task Mode | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|---|---|
| 156 | | | Install FPC Structure | 3 days | Tue 11/2/27 | Thu 11/4/27 | 155 |
| 157 | | | Install FVH Structure | 3 days | Fri 11/5/27 | Tue 11/9/27 | 156 |
| 158 | | | Install FRI Structure | 3 days | Wed 11/10/27 | Fri 11/12/27 | 157 |
| 159 | | | Install Beamline | 3 days | Mon 11/15/27 | Wed 11/17/27 | 158 |
| 160 | | | Cable detectors | 15 days | Thu 11/18/27 | Wed 12/8/27 | 159 |
| 161 | | | Test all systems | 15 days | Thu 12/9/27 | Wed 12/29/27 | 160 |
| 162 | | | | | | | |
| 163 | | | | | | | |
| 164 | | | Receive detector from Julich | 1 day | Mon 9/30/24 | Mon 9/30/24 | |
| 165 | | | Get on KPT updated drawings | 1 day | Wed 5/15/24 | Wed 5/15/24 | |
| 166 | | | Beam 2026 stops | 1 day | Thu 5/21/26 | Thu 5/21/26 | |
| 167 | | | Start of schedule | 1 day | Mon 4/29/24 | Mon 4/29/24 | |
| 168 | | | Decisions on collimator and profiler | 1 day | Thu 8/29/24 | Thu 8/29/24 | |
| 169 | | | Finish CPS absorber test | 1 day | Tue 8/13/24 | Tue 8/13/24 | |




Project: K-Long Design, Fab an
Date: Fri 5/3/24

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Task | | Project Summary | | Manual Task | | Start-only | | Deadline | |
| Split | | Inactive Task | | Duration-only | | Finish-only | | Progress | |
| Milestone | | Inactive Milestone | | Manual Summary Rollup | | External Tasks | | Manual Progress | |
| Summary | | Inactive Summary | | Manual Summary | | External Milestone | | | |