HYPER-NUCLEAR DESIGN STATUS

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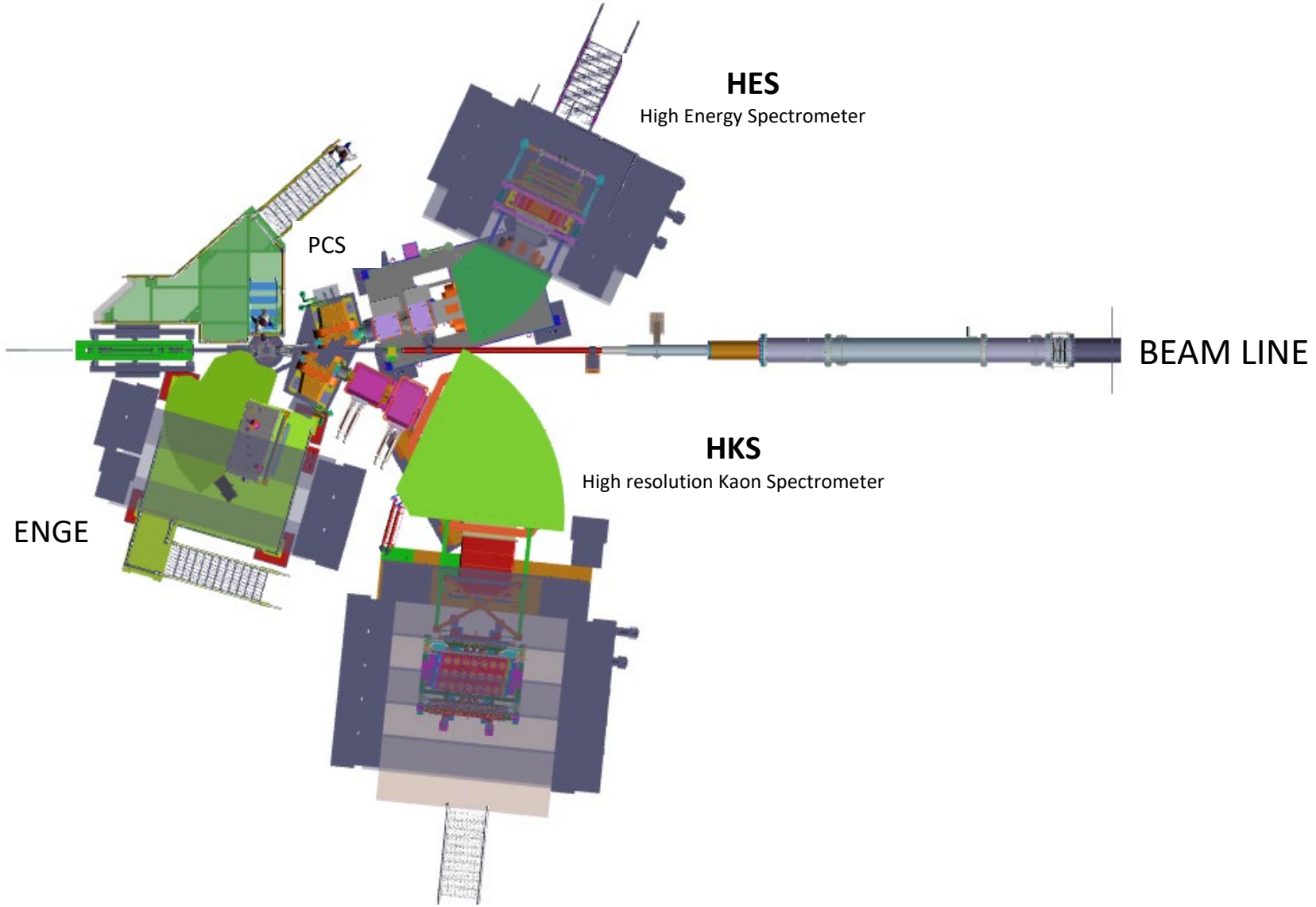
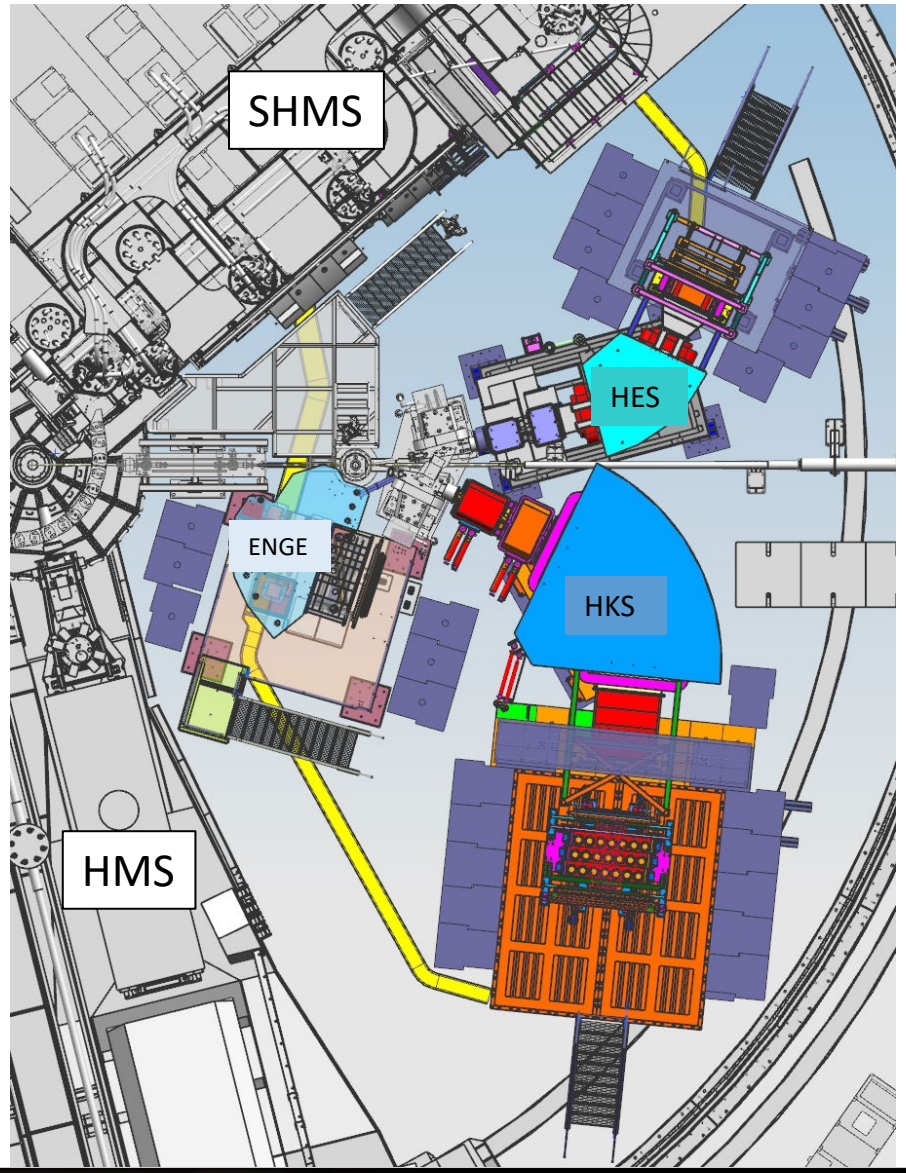
HALL C

- *Nansemond Pre Cast Concrete* – Radiation Shielding
  - P.O. 25-D1718-0 - Deliverables late Sept-Oct 2026
    - 62 WALL BLOCKS
    - 18 MEDIUM BLOCKS
- Cabling with Bill Henry
  - Cable routing
- PCS
  - Metrology Survey Complete and data compared with drawings.
- Power Supply Unit Procurement
  - Qty 3 Purchase Requisition(441768) on hold
  - Qty 1 Still needs PR submittal.
  - DELIVER HKS PSU TO TEST LAB FOR MOLLER TESTING
- LCW
  - Preliminary Schematic Produced
  - Establish preliminary Bill of Materials
- SCHEDULES
- FUTURE TASKS

HYPER NUCLEAR – LAYOUT(TOP VIEW)



HYPER NUCLEAR – LAYOUT (TOP VIEW)



BEAM LINE

Cables Needed

LOCATION

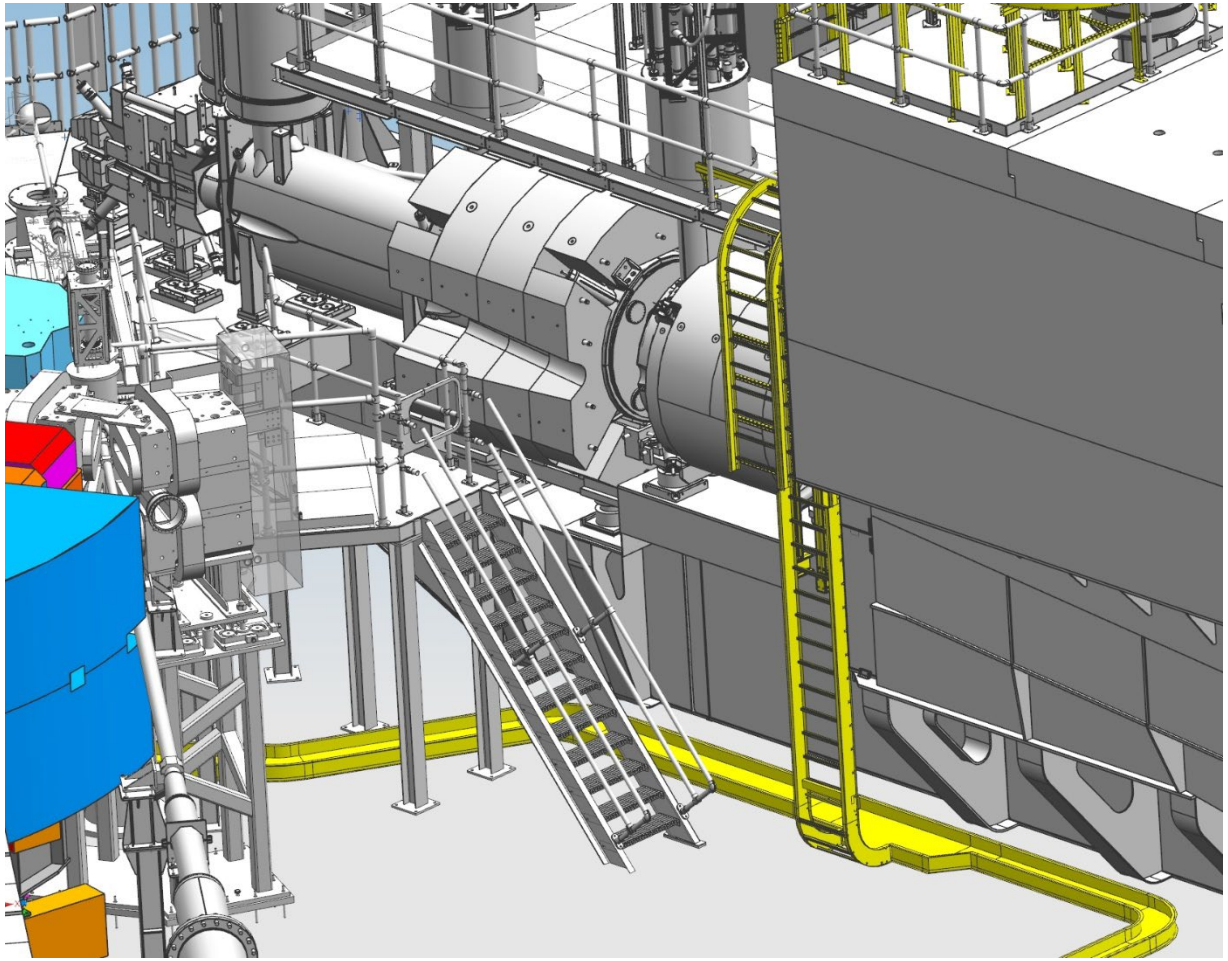
CDet

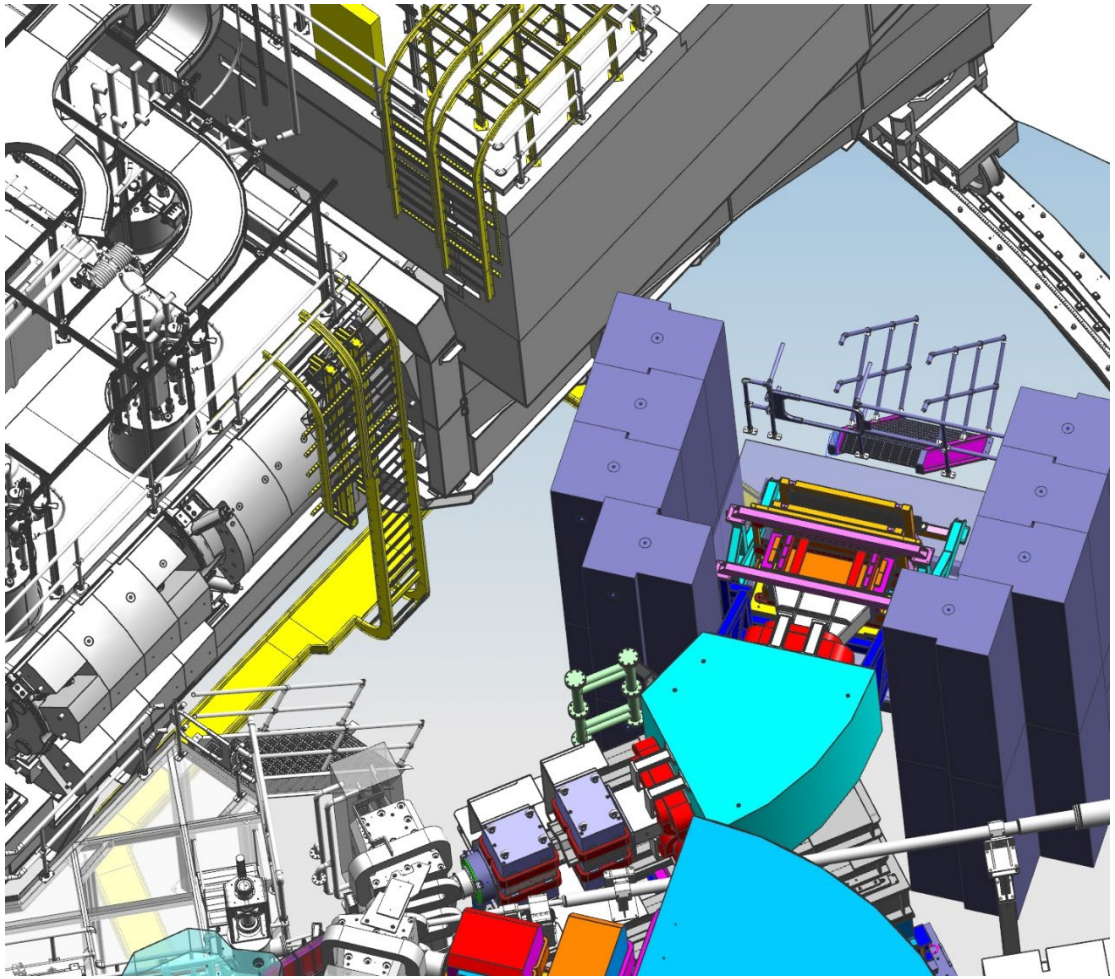
BigBITE

NPS

Spectrometer	Distance	Ribbon	HV	Distance	Signal	CAD
HKS	225’	80	182	145’	178	150
HES	165’	70	118	85’	116	110
ENGE	185’	40	50	115’	48	125
ENGE SciFi	155’	52	?			

HYPER NUCLEAR – CABLE ROUTING

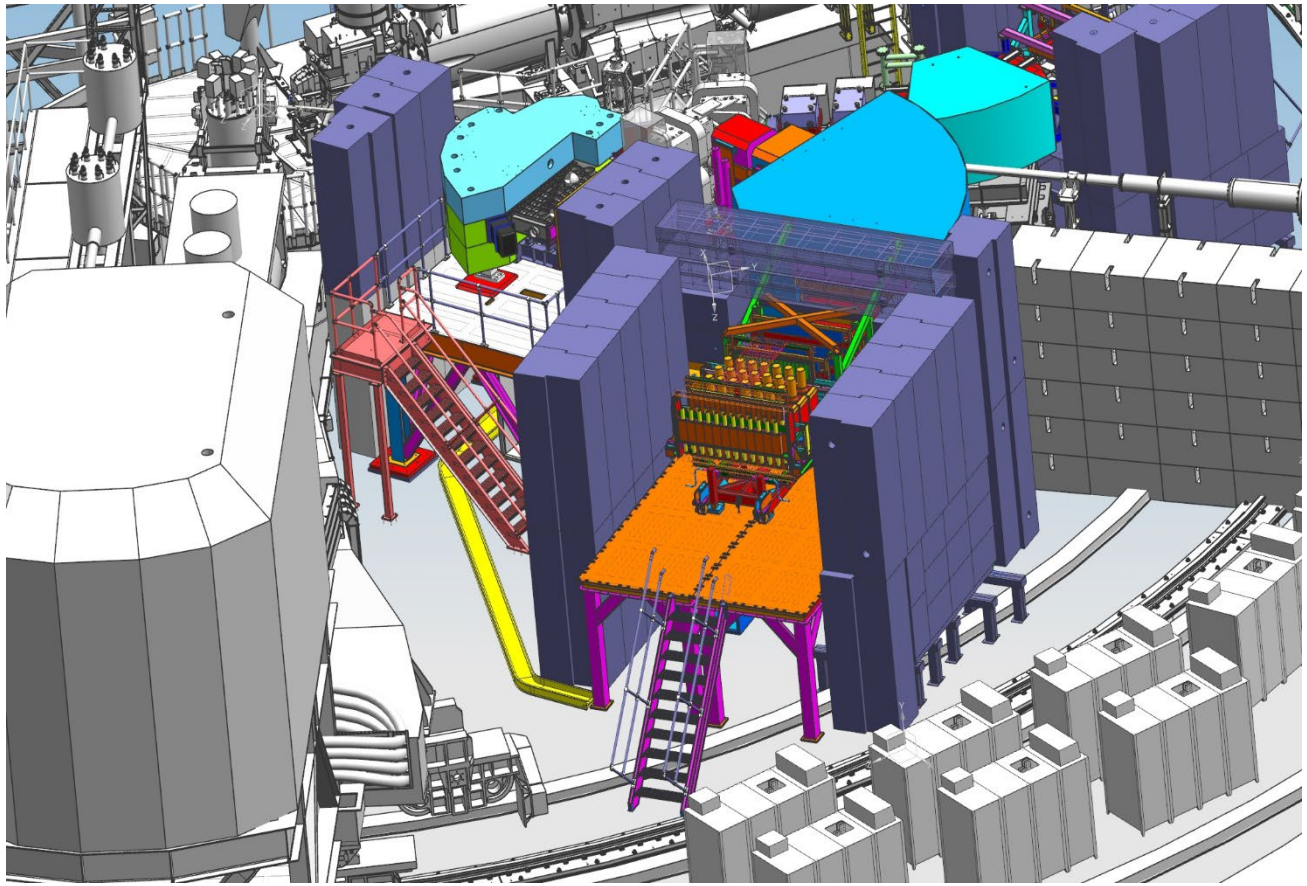




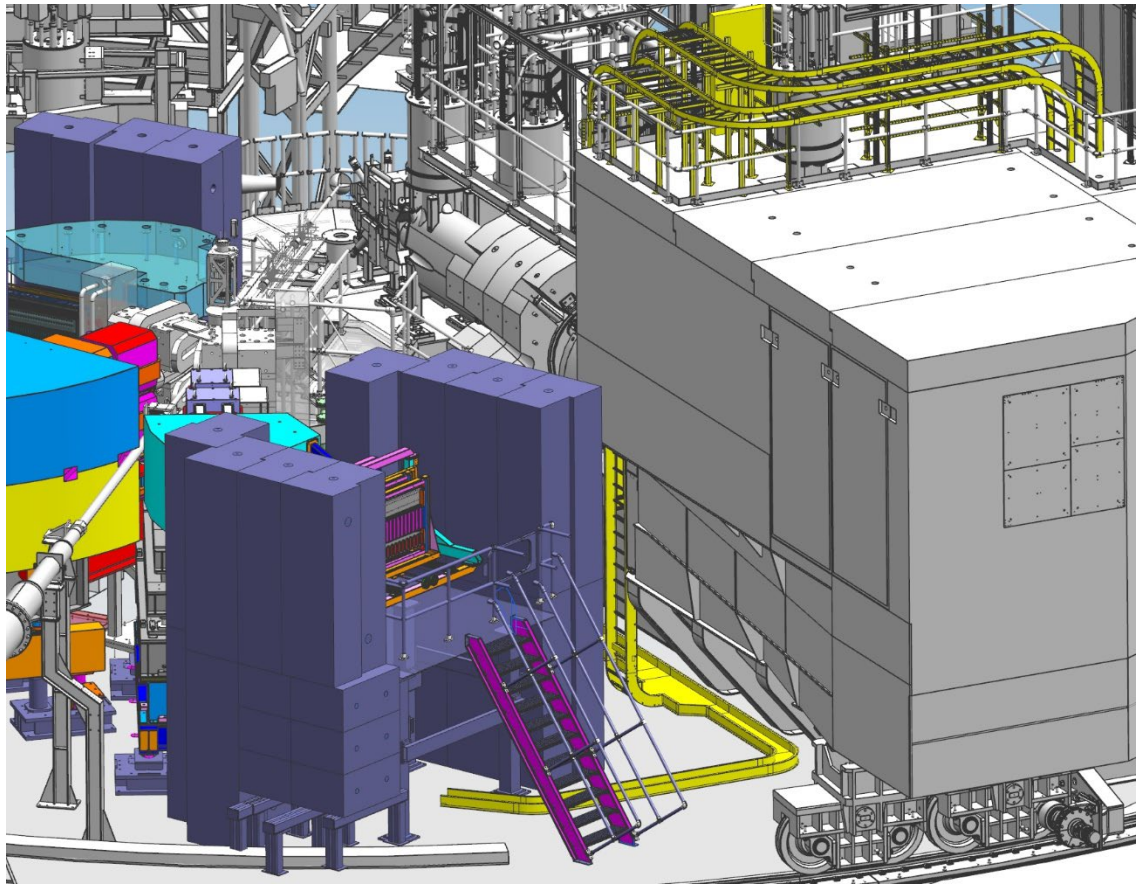
CABLE TRAY LAYOUT FROM SUPER HMS(YELLOW)

HYPER NUCLEAR – CABLE ROUTING

HKS



HES



CABLE TRAY LAYOUT FROM SUPER HMS(YELLOW)

PCS MAGNETS

SURVEY MONUMENTS INSTALLED

MOUNTING INTERFACE CONFIRMED

HYPER NUCLEAR – POWER SUPPLY UNITS PROCUREMENT

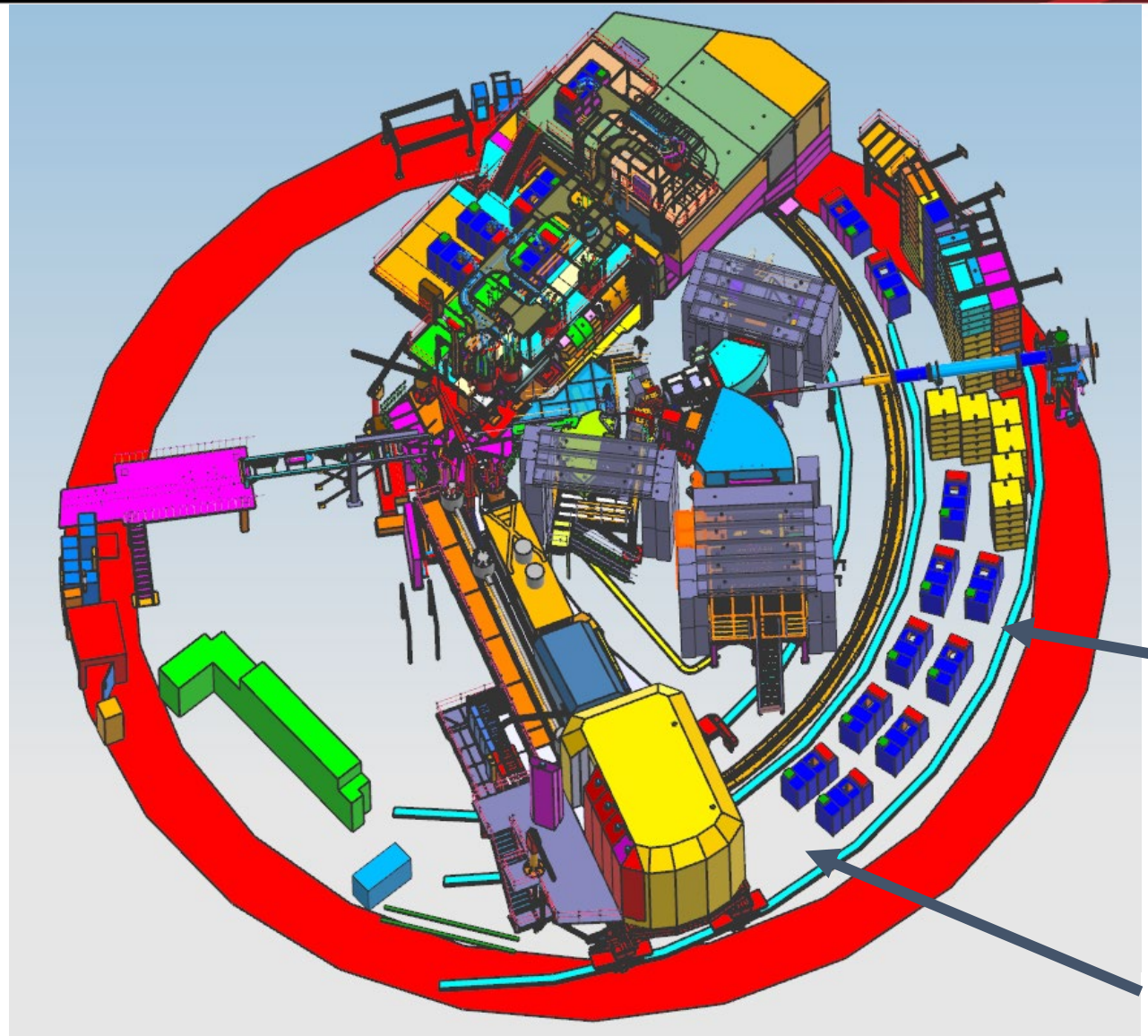
Magnet	Current (with overhead for MOL) (A)	Voltage (V)	Magnet DC Power kW	Magnet LCW (L/min)	Inductance (H)	Magnet LCW pressure (MPa)	Magnet resistance (not including leads)	PSU – New or existing	PSU Water Flow (L/min) 0.6LPM/kW	PSU DC Power (kW)	Regulation (PPM)
HES E Dipole	1,000	220	220	95	0.820	0.5	0.181/pole	Existing HES PSU	45	220	
HES E Q1	800	110	88	41	0.054	0.5	0.111	Existing BB	28	90	
HES E Q2	800	110	88	41.4	0.056	0.5	0.109	Left Q1 Hall A	48	90	
HKS Dipole	1,140	165	188	135.1	1.95	0.67	0.145	Existing HKS PSU	45	190	
HKS Q1	875	160	140	49.6	No data Use HKS Q2	0.36	0.181	Existing Compton PSU	43	140	
PCS (k)	1,700	106	180	100	2.0 (from vendor report)	0.16	0.06	Existing SBB	50	186	10
PCS (k) corr	1,000	97	97	100	2.0 (from vendor report)	0.16	0.01	Existing NPS PSU	32	97	10
Corrector magnet	150A			Air cooled		NA		Existing (NPS)	NA		

HYPER NUCLEAR – POWER SUPPLY UNITS PROCUREMENT

Magnet	Current (with overhead for MOL) (A)	Voltage (V)	Magnet DC Power kW	Magnet LCW (L/min)	Inductance (H)	Magnet LCW pressure (MPa)	Magnet resistance (not including leads)	PSU – New or existing	PSU Water Flow (L/min) 0.6LPM/kW	PSU DC Power (kW)	Regulation (PPM)
PCS (e')	1,800	130	180	100	2.0 (from vendor report)	100	0.06	**PR 441768 ON HOLD**	112	186	10
PCS(e') corr	1,100	120	97	100	2.0 (from vendor report)	100	0.1	**PR 441768 ON HOLD**	58	97	10
HKS Q2	500	60	28	17.3	0.36	0.38	0.119	**PR 441768 ON HOLD**	15	25	10
ENGE	**331**	**50**	100	**50**	1.59	**1.0**		**IN PROCESS**	11	17	10
Sub Totals (both sheets)			**1,406**	**829.4**					**487 128 GPM**	**1,338**	

WAITING FOR BUDGET OFFICE APPROVAL(All other signatures obtained)*

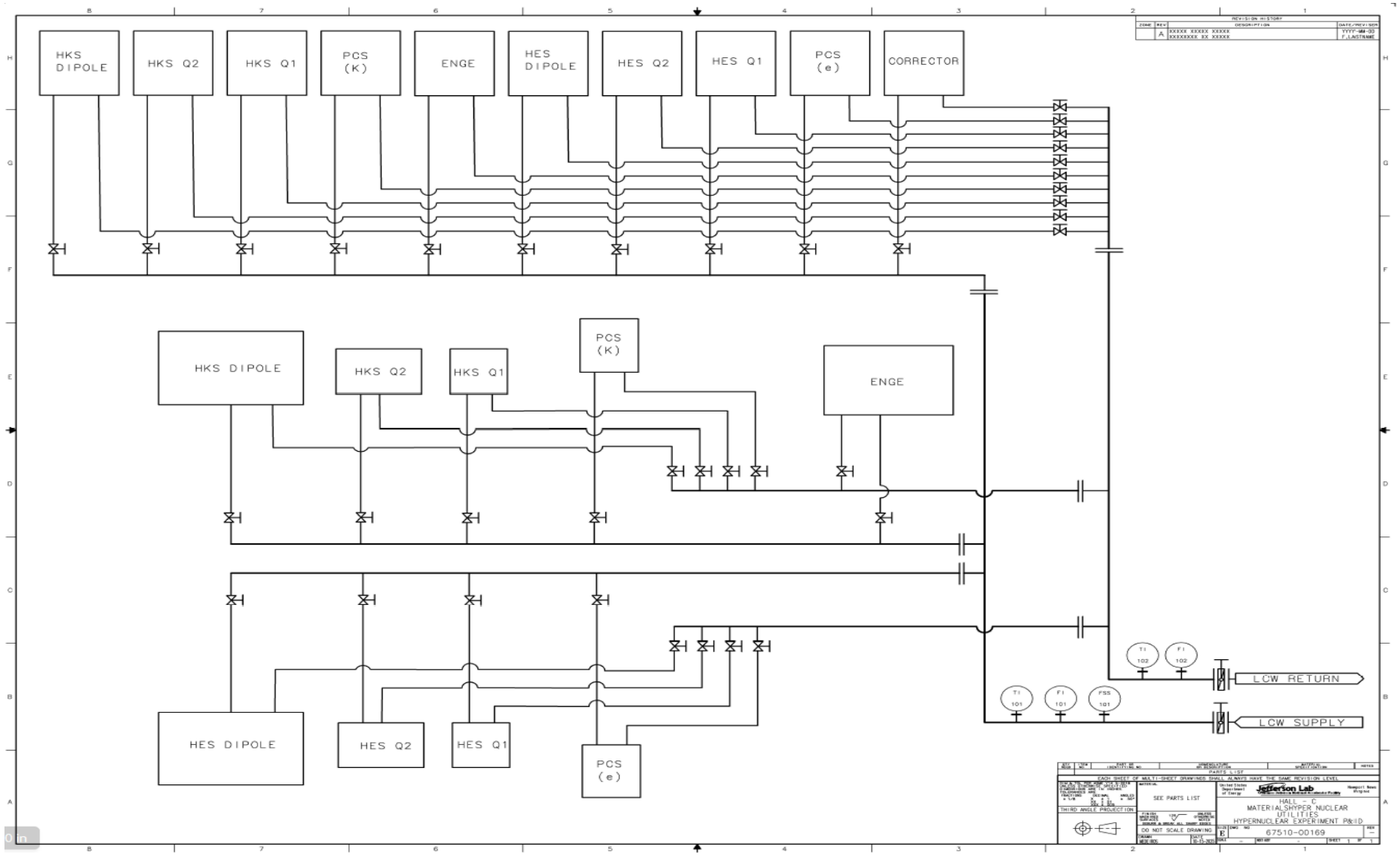
HYPER NUCLEAR – PSU/LCW LOCATION



PSU LOCATION
(BLUE)

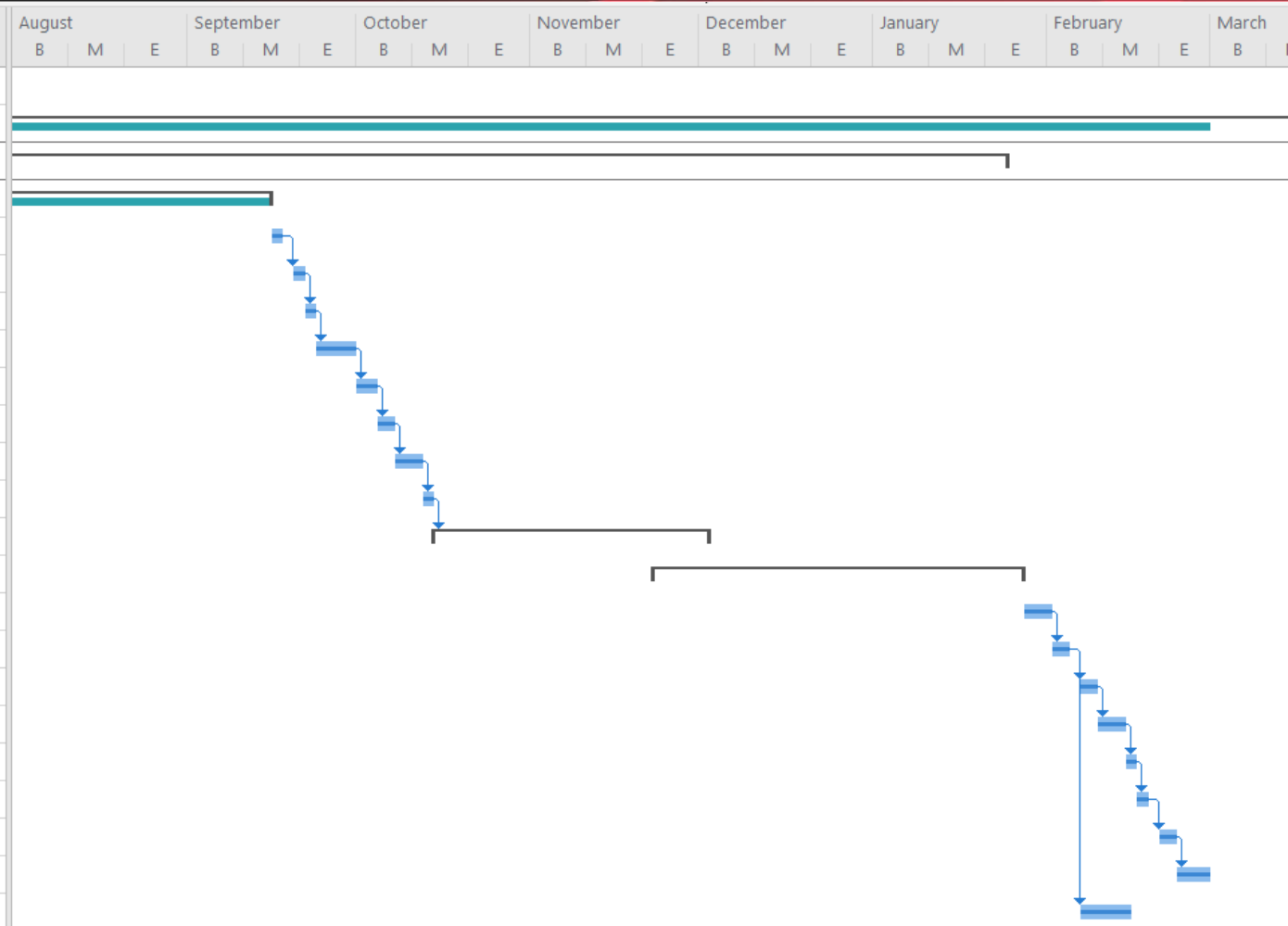
LCW FROM HMS SIDE OF HALL

PRELIMINARY LCW SCHEMATIC



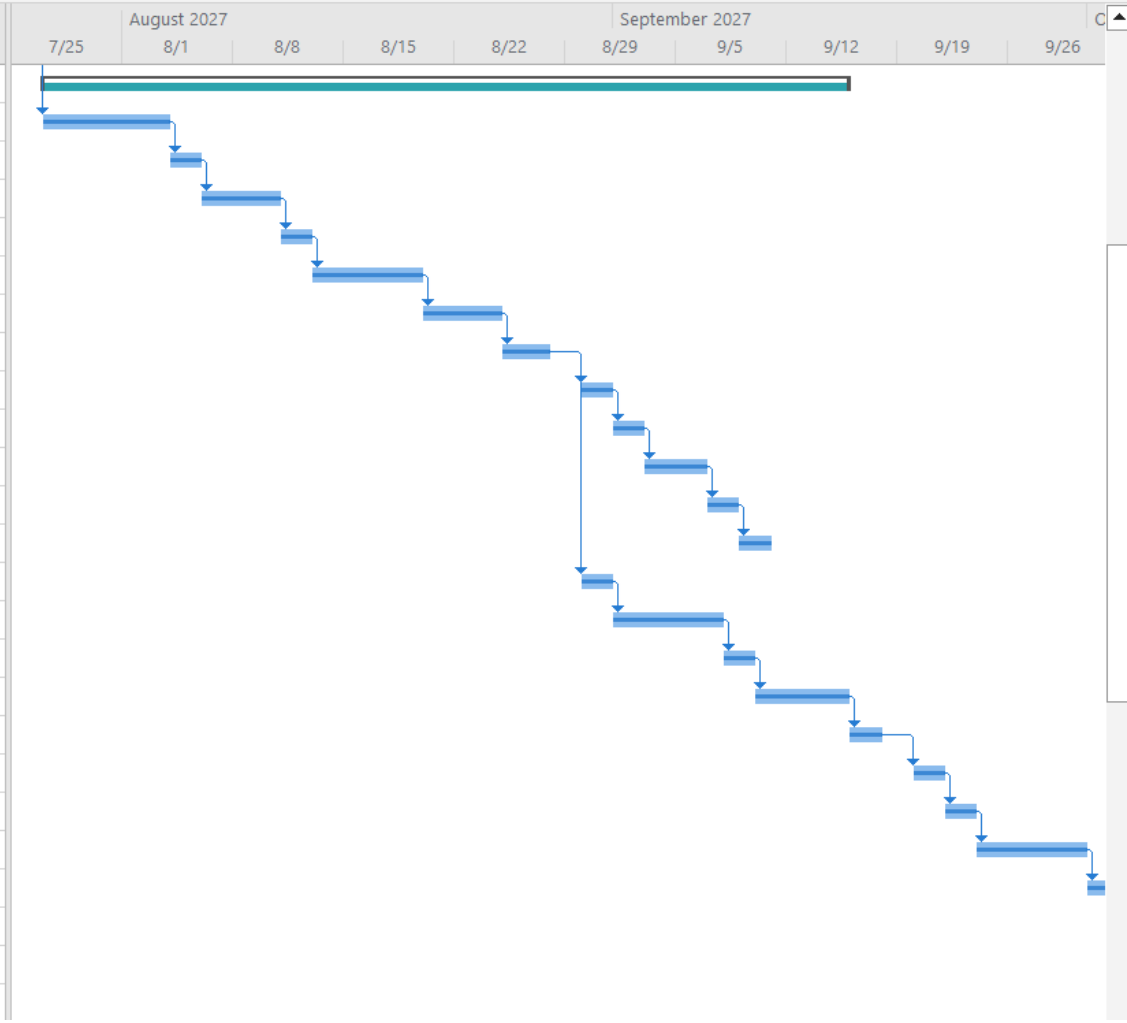
HYPER NUCLEAR – SCHEDULE

	Task Mode	Task Name	Duration	Start	Finish
1					
2		**HyperNuclear Installation**	**300 days**	**Mon 3/22/27**	**Fri 5/12/28**
3		**SHMS Moved to Beam right**	**233 days**	**Thu 3/4/27**	**Mon 1/24/28**
15		**ENGE Installation**	**37 days**	**Tue 7/27/27**	**Wed 9/15/27**
32		Target support post installation	2 days	Thu 9/16/27	Fri 9/17/27
33		Target platform installation	2 days	Mon 9/20/27	Tue 9/21/27
34		Upstream Girder Suport stand installation	2 days	Wed 9/22/27	Thu 9/23/27
35		PCS Magnets Installation	5 days	Fri 9/24/27	Thu 9/30/27
36		Target chamber installation	2 days	Fri 10/1/27	Mon 10/4/27
37		Sieve Slits (2x) Installation	3 days	Tue 10/5/27	Thu 10/7/27
38		First Section of Beamline installation	3 days	Fri 10/8/27	Tue 10/12/27
39		NPS correction magnet Installation	2 days	Wed 10/13/27	Thu 10/14/27
40		**HES Arm**	**35 days**	**Fri 10/15/27**	**Thu 12/2/27**
52		**HKS Arm**	**48 days**	**Tue 11/23/27**	**Thu 1/27/28**
65		Vacuum pumps installation	3 days	Fri 1/28/28	Tue 2/1/28
66		Downstream beam line installation	3 days	Wed 2/2/28	Fri 2/4/28
67		Cable trays	3 days	Mon 2/7/28	Wed 2/9/28
68		DC power cables	3 days	Thu 2/10/28	Mon 2/14/28
69		LCW lines (around magnets)	2 days	Tue 2/15/28	Wed 2/16/28
70		LCW lines to pivot	2 days	Thu 2/17/28	Fri 2/18/28
71		DC power supplies (12x)	3 days	Mon 2/21/28	Wed 2/23/28
72		480 Vac power lines	4 days	Thu 2/24/28	Tue 2/29/28
73		Install Power Supplies	7 days	Mon 2/7/28	Tue 2/15/28
74		Girder Installation	1 day	Tue 4/8/25	Tue 4/8/25
75		Target installation	1 day	Tue 4/8/25	Tue 4/8/25
76		Cryo lines Installation	1 day	Tue 4/8/25	Tue 4/8/25



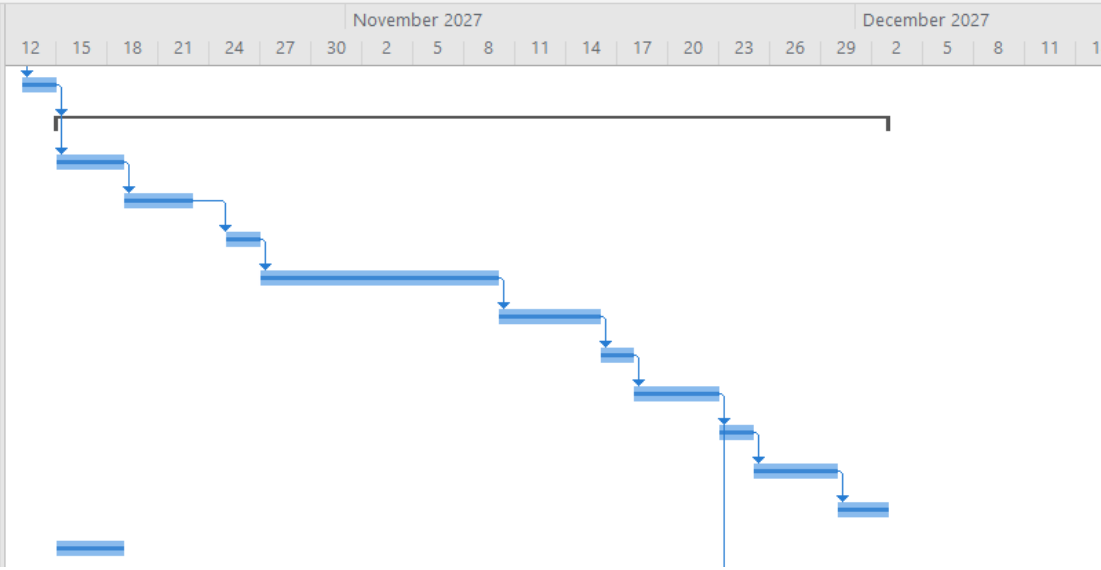
HYPER NUCLEAR – SCHEDULE

	Task Mode	Task Name	Duration	Start	Finish
15		**ENGE Installation**	**37 days**	**Tue 7/27/27**	**Wed 9/15/27**
16		Prep Hall for ENGE magnet	6 days	**Tue 7/27/27**	Tue 8/3/27
17		Stage HyperNuclear items in ESB	2 days	Wed 8/4/27	Thu 8/5/27
18		Move ENGE out of ESB	3 days	Fri 8/6/27	Tue 8/10/27
19		Transfer ENGE to Hall C	2 days	Wed 8/11/27	Thu 8/12/27
20		Move ENGE around SHMS	5 days	Fri 8/13/27	Thu 8/19/27
21		Move SHMS to largest Angle	3 days	Fri 8/20/27	Tue 8/24/27
22		ENGE Shield blocks 13x26x26 (15x) Install (under platform shielding)	3 days	Wed 8/25/27	Fri 8/27/27
23		Crane in ENGE support frame	2 days	Mon 8/30/27	Tue 8/31/27
24		Position/Survey/Align/Grout ENGE Support Frame	2 days	Wed 9/1/27	Thu 9/2/27
25		Bring in Lifting tower	2 days	Fri 9/3/27	Mon 9/6/27
26		Position ENGE onto Support Frame	2 days	Tue 9/7/27	Wed 9/8/27
27		Remove lift towers from hall	2 days	Thu 9/9/27	Fri 9/10/27
28		ENGE detector platform (mounts to magnet)	2 days	Mon 8/30/27	Tue 8/31/27
29		ENGE detector package	5 days	Wed 9/1/27	Tue 9/7/27
30		ENGE roof blocks (3x)	2 days	Wed 9/8/27	Thu 9/9/27
31		ENGE wall blocks (12x)	4 days	Fri 9/10/27	Wed 9/15/27
32		Target support post installation	2 days	Thu 9/16/27	Fri 9/17/27
33		Target platform installation	2 days	Mon 9/20/27	Tue 9/21/27
34		Upstream Girder Suport stand installation	2 days	Wed 9/22/27	Thu 9/23/27
35		PCS Magnets Installation	5 days	Fri 9/24/27	Thu 9/30/27
36		Target chamber installation	2 days	Fri 10/1/27	Mon 10/4/27
37		Sieve Slits (2x) Installation	3 days	Tue 10/5/27	Thu 10/7/27
38		First Section of Beamline installation	3 days	Fri 10/8/27	Tue 10/12/27
39		NPS correction magnet Installation	2 days	Wed 10/13/27	Thu 10/14/27



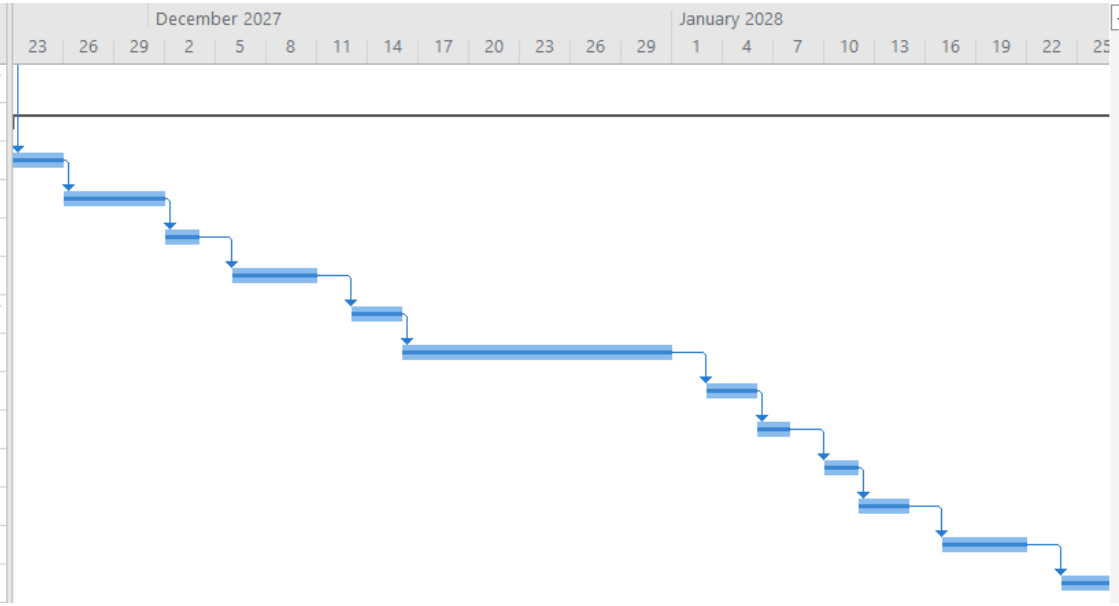
HYPER NUCLEAR – SCHEDULE

	Task Mode	Task Name	Duration	Start	Finish
39	✓	NPS correction magnet Installation	2 days	Wed 10/13/27	Thu 10/14/27
40	✓	**HES Arm**	**35 days**	**Fri 10/15/27**	**Thu 12/2/27**
41	✓	HES support frame installation	2 days	Fri 10/15/27	Mon 10/18/27
42	✓	HES Quad(2x) installation	4 days	Tue 10/19/27	Fri 10/22/27
43	✓	HES Bellows	2 days	Mon 10/25/27	Tue 10/26/27
44	✓	HES Dipole	10 days	Wed 10/27/27	Tue 11/9/27
45	✓	HES Shield blocks 13x26x26 (24x)	4 days	Wed 11/10/27	Mon 11/15/27
46	✓	HES Detector frame / platform	2 days	Tue 11/16/27	Wed 11/17/27
47	✓	HES Detector	3 days	Thu 11/18/27	Mon 11/22/27
48	✓	HES Rail Bridge	2 days	Tue 11/23/27	Wed 11/24/27
49	✓	HES wall Blocks (14x)	3 days	Thu 11/25/27	Mon 11/29/27
50	✓	HES Large Shield Blocks (6x)	3 days	Tue 11/30/27	Thu 12/2/27
51	✓	HES roof blocks (4x)	2 days	Fri 10/15/27	Mon 10/18/27



HYPER NUCLEAR – SCHEDULE

	Task Mode	Task Name	Duration	Start	Finish
51	✓	HES roof blocks (4x)	2 days	Fri 10/15/27	Mon 10/18/27
52	✓	**HKS Arm**	**48 days**	**Tue 11/23/27**	**Thu 1/27/28**
53	✓	HKS support frame installation	3 days	Tue 11/23/27	Thu 11/25/27
54	✓	HKS Quad (2x) installation	4 days	Fri 11/26/27	Wed 12/1/27
55	✓	HKS Bellows	2 days	Thu 12/2/27	Fri 12/3/27
56	✓	Shield Block 13x26x26 (28x)	5 days	Mon 12/6/27	Fri 12/10/27
57	✓	Shield Block 52x52x26 (15)	3 days	Mon 12/13/27	Wed 12/15/27
58	✓	HK Dipole	12 days	Thu 12/16/27	Fri 12/31/27
59	✓	HKS Detector	3 days	Mon 1/3/28	Wed 1/5/28
60	✓	HKS Rail Bridge	2 days	Thu 1/6/28	Fri 1/7/28
61	✓	HKS Detector frame / platform (2x)	2 days	Mon 1/10/28	Tue 1/11/28
62	✓	Large Shield Block (15x)	3 days	Wed 1/12/28	Fri 1/14/28
63	✓	HKS wall blocks (28x)	5 days	Mon 1/17/28	Fri 1/21/28
64	✓	HKS roof blocks (7x)	4 days	Mon 1/24/28	Thu 1/27/28



FUTURE TASKS

- TIMELINE TO CHECKOUT EXISTING POWER SUPPLIES
- TESTING OF PCS MAGNETS
- VACUUM BEAMLINE
- ASSEMBLY PROCEDURES AND PTW GENERATION
- MANPOWER EXPECTATIONS
  - *DESIGNER on loan from Hall A*