

FY16 NSTX RUN LOG

NSTX-U FY 16 Run started on Dec. 18, 2015.

FY 2016 Operation Target: 18 run weeks

Complete: 10.06 run weeks producing 1066 plasmas

| Date | Run Time (Daily hrs) | Accumulated FY Run Time (hrs) | Accumulated FY Run Weeks (40 hours / week) | Plasma Attempts | Plasma Achieved | Experimental Topics | Comments |
|-------------------|-------------------------|----------------------------------|--|--------------------|--------------------|--|---|
| 12/18/15 | 4.83 | 4.83 | 0.12 | 13 | 11 | XMP-101: Inductive Start-Up Scenarios | Delayed start for ISTP. Missed shots/down time for ECH |
| Week's End | | 4.83 | 0.12 | | | | |
| 12/21/15 | 3.63 | 8.46 | 0.21 | 15 | 15 | XMP-106: Magnetic Calibration XMP-101: Inductive Start-Up Scenarios | Delayed start for field coil/PSRTC/PCS Testing |
| 12/22/15 | 7.89 | 16.35 | 0.41 | 25 | 25 | XMP-126: Ip and R Control XMP-105: Vertical Position Control Checkout | Additional test time for PF3U/L test shots. |
| Week's End | | 16.35 | 0.41 | | | | |
| 1/4/16 | 0 | 16.35 | 0.41 | 0 | 0 | | Vacuum Vessel Boronization |
| 1/5/16 | 5.05 | 21.4 | 0.54 | 11 | 7 | XMP-101: Inductive Start-Up Scenarios XMP-126: Ip and R Control | Missed shots on FCPC/Controls. Down due to ECH/FCPC |
| 1/6/16 | 6.78 | 28.18 | 0.70 | 19 | 9 | XMP-101: Inductive Start-Up Scenarios XMP-105: Vertical Position Control Checkout XMP-126: Ip and R Control | Missed shots on Controls/FCPC. Down for FCPC. |
| 1/7/16 | 8.18 | 36.36 | 0.91 | 26 | 25 | XMP-127: Neutral beams into plasma XMP-107: Neutron Calibration Transfer XMP-101: Inductive Start-Up Scenarios XMP-105: Vertical Position Control Checkout XMP-126: Ip and R Control | Down for Ip permissive |
| 1/8/16 | 8.24 | 44.6 | 1.12 | 26 | 23 | XMP-127: Neutral Beams into Plasma XMP-105: Vertical Position Control Checkout XMP-126: Ip and R Control XMP-106: Magnetic Calibration | Mag test shots after 4PM |
| Week's End | | 44.6 | 1.12 | | | | |
| 1/11/16 | | | | 0 | 0 | | TF Water Fitting Repair. Vacuum Vessel Boronization on 2nd shift |
| 1/12/16 | 7.86 | 52.46 | 1.31 | 18 | 15 | XMP-128: Increase the Elongation in L-Mode | Extra test time for gas injection system(GIS). Down due to Controls/Torus systems. |
| 1/13/16 | 7.6 | 60.06 | 1.50 | 25 | 15 | XMP-128: Increase the Elongation in L-Mode | Time spent on NB Conditioning. Missed shots on fizzles/FCPC |
| 1/14/16 | 7.07 | 67.13 | 1.68 | 22 | 19 | XMP-128: Increase the Elongation in L-Mode XMP-116: Initial H-mode Development | Additional test time for FCPC/NB. Missed shots on fizzles/FCPC |
| 1/15/16 | 3.19 | 70.32 | 1.76 | 8 | 6 | XMP-116: Initial H-mode Development | Delayed start to GIS/FCPC. Down for FCPC. Missed shots on PCS |
| Week's End | | 70.32 | 1.76 | | | | |
| 1/18/16 | 4.58 | 74.9 | 1.87 | 15 | 10 | XMP-101: Inductive Start-Up Scenarios XMP-106: Magnetic calibration XMP-116: Initial H-mode Development | Delayed start for GIS. Extra testing for Mag Diag. Down for PCS/FCPC. Missed shots on DCPS/FCPC |
| 1/19/16 | 7.27 | 82.17 | 2.05 | 25 | 23 | XMP-116: Initial H-mode Development | Delayed start/Down for FCPC. Missed shots on disrupts |
| 1/20/16 | 0 | 82.17 | 2.05 | 0 | 0 | | Investigate PF1CU electrical insulation |
| 1/21/16 | 4.04 | 86.21 | 2.16 | 12 | 11 | XMP-116: Initial H-mode Development XMP-121: Six SPA and RWM coil checkout | Down for water/SPA's. Missed shot on fizzle |

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|-------------------|------|---------------|-------------|----|----|---|---|
| | | | | | | XP-1506: Low-beta locked mode studies | |
| 1/22/16 | 8.43 | 94.64 | 2.37 | 29 | 27 | XMP-116: Initial H-mode Development XP-1506: Low-beta Low-desntiy Locked Mode Studies | Down/CA for NB. Missed shots on level 1 Faults |
| Week's End | | 94.64 | 2.37 | | | | |
| 2/8/16 | 0 | 94.64 | 2.37 | 0 | 0 | | Investigate Outer Vacuum Vessel to Gnd leakage Path |
| 2/9/16 | 3.28 | 97.92 | 2.45 | 9 | 7 | XMP-137: Increase Ip and Kappa in L- and H-modes. XMP-138: Vertical Control Checkout | Extra Test time for Controls/FCPC. Missed shots on Aborts |
| 2/10/16 | 0.75 | 98.67 | 2.47 | 1 | 1 | XMP-137: Increase Ip and Kappa in L- and H-modes. XMP-138: Vertical Control Checkout | Extra test time for NB. Down for GIS |
| 2/11/16 | 7.06 | 105.73 | 2.64 | 19 | 19 | XMP-137: Increase Ip and Kappa in L- and H-modes. XMP-138: Vertical Control Checkout XMP-115: Isoflux Commissioning | Extra test time for Controls. Down for Controls |
| 2/12/16 | 3.32 | 109.05 | 2.73 | 10 | 9 | XMP-115: Isoflux Commissioning | Delayed/down start for MG. Missed shot on Abort (NB) |
| Week's End | | 109.05 | 2.73 | | | | |
| 2/15/16 | 2.66 | 111.71 | 2.79 | 7 | 6 | XMP-137: Increase Ip and Kappa in L- and H-modes. | Delayed start for TVPS. Delayed/down for FCPC. Missed shot on Com |
| 2/16/16 | 2.45 | 114.16 | 2.85 | 6 | 3 | XP-1506: Low-beta Low-desntiy Locked Mode Studies | Delayed start/Down for FCPC/Con. Early End/CA for TOR. Missed shots on Aborts, Fizzles. |
| 2/17/16 | 0 | 114.16 | 2.85 | 0 | 0 | | Only testing/troubleshootingGIS, FCPC & Controls |
| 2/18/16 | 3.98 | 118.14 | 2.95 | 7 | 5 | XMP-115: Isoflux Commissioning XP-1506: Low-beta Low-desntiy Locked Mode Studies | CA/Down for GIS/NB/Control. Missed shots on DCPS |
| 2/19/16 | 9.13 | 127.27 | 3.18 | 25 | 23 | XMP-115: Isoflux Commissioning | Missed shots on DCPS |
| Week's End | | 127.27 | 3.18 | | | | |
| 2/22/16 | 1.8 | 129.07 | 3.23 | 5 | 4 | XMP-115: Isoflux Commissioning | Delayed start for NB1A/GIS. Delayed/down for DCPS/Penning |
| 2/23/16 | 4.63 | 133.7 | 3.34 | 15 | 15 | XMP-115: Isoflux Commissioning | Delayed start for NB1A. |
| 2/24/16 | 8.03 | 141.73 | 3.54 | 18 | 17 | XMP-115: Isoflux Commissioning | Delayed start for NB1A. |
| 2/25/16 | 6.58 | 148.31 | 3.71 | 21 | 20 | XMP140: PF-5 Proportional EFC Test | GIS Work |
| 2/26/16 | 7.68 | 155.99 | 3.90 | 22 | 18 | XMP-137: Increase Ip and Kappa in L- and H-modes. | Down for Con/FCPC |
| Week's End | | 155.99 | 3.86 | | | | |
| 2/29/16 | 6.9 | 162.89 | 4.07 | 23 | 16 | XMP-121: Six SPA and RWM Coil Checkout XMP-137: Increase Ip and kappa in L- and H-modes. | Down for water PLC/Controls. Missed shots on DCPS/Fizzle/Con |
| 3/1/16 | 7.78 | 170.67 | 4.27 | 24 | 23 | XMP140: PF-5 Proportional EFC Test XMP-137: Increase Ip and Kappa in L- and H-modes. | Delayerd start for water PLC. Missed shot on fizzle. |
| 3/2/16 | 6.88 | 177.55 | 4.44 | 17 | 17 | XMP-137: Increase Ip and Kappa in L- and H-modes. | Delayed start for controls. Down for Water PLC/FCPC PLC |
| 3/3/16 | 8.46 | 186.01 | 4.65 | 25 | 24 | XMP-111: MPTS Commissioning XP-1506:Low-Beta Error Field Correction | Prob. with Con glitches/NB reliability. Missed shot on abort. |
| 3/4/16 | 8.19 | 194.2 | 4.86 | 26 | 24 | XMP-115: Isoflux Commissioning XMP-138: Vertical Control Checkout XMP-137: Increase Ip and Kappa in L- and H-modes. | Down for Water PLC. Early NB trips. Miss shots on Aborts |
| Week's End | | 194.2 | 4.86 | | | | |
| 3/21/16 | 0 | 194.2 | 4.86 | 0 | 0 | XMP-143: Access Machine Conditions | Recovery plasmas from Vessel quick Ar Vent. No accrued Ops |

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|-------------------|------|---------------|-------------|----|----|--|--|
| 3/22/16 | 9.55 | 203.75 | 5.09 | 21 | 21 | XMP-120: X-Point and Strike-point Control | Break for Controls/Tech coverage |
| 3/23/16 | 6.69 | 210.44 | 5.26 | 19 | 17 | XMP-120: X-Point and Strike-point Control | Conclude early for NB Conditioning. Missed shots on fizzles |
| 3/24/16 | 5.27 | 215.71 | 5.39 | 12 | 10 | XP-1506: Low-beta Error Field Assessment | Down for FCPC (Multiple) & Controls. Missed shots on Cor/FCPC |
| 3/25/16 | 7.48 | 223.19 | 5.58 | 21 | 17 | XMP-142: Reduced MHD H-mode Development | Delayed start for FCPC. CA for Tour. Missed shots on NB/Abort/Fizz |
| Week's End | | 223.19 | 5.58 | | | | |
| 3/28/16 | 8.84 | 232.03 | 5.80 | 29 | 28 | XMP-143: Access Machine Conditions XMP-142: Reduced MHD H-mode Development | Delayed start for NB/TVPS. Missed shot on abort (NB) |
| 3/29/16 | 8.64 | 240.67 | 6.02 | 27 | 24 | XMP-142: Reduced MHD H-mode Development XMP-145: Development of Scenarios with | Down/CA for TVPS. Missed shots on aborts (NB) |
| 3/30/16 | 3.48 | 244.15 | 6.10 | 8 | 8 | XMP-110: Diagnostic Checkout of NB Injection Fast Ions | Delayed start for FCPC. Early stop for Boronization |
| 3/31/16 | 6.55 | 250.7 | 6.27 | 22 | 21 | XMP-143: Access Machine Conditions XMP-142: Reduced MHD H-mode Development | Delayed start for NB. Missed shot on Abort (NB) |
| 4/1/16 | 9.07 | 259.77 | 6.49 | 26 | 26 | XP-1506: Low-beta Error Field Assessment XMP-146: Initial n=2,3 Error Field Correction XMP-110: FIDA/ssNPA/sFLIP checkout | Down for water sys trip. |
| Week's End | | 259.77 | 6.49 | | | | |
| 4/4/16 | 8.33 | 268.1 | 6.70 | 23 | 23 | XMP-143: Access Machine Conditions XMP-142: Reduced MHD H-mode Development | Early stop for FCPC water leak. |
| 4/5/16 | 4.79 | 272.89 | 6.82 | 15 | 15 | XMP-143: Access Machine Conditions XMP-142: Reduced MHD H-mode Development XMP-147: Development of L-mode fiducial shot | Delayed start for FCPC/vessel loop fault |
| 4/6/16 | 4.93 | 277.82 | 6.95 | 11 | 11 | XMP-143: Access Machine Conditions XMP-147: Development of L-mode fiducial shot | Early shutdown for chilled water leak |
| 4/7/16 | 4.07 | 281.89 | 7.05 | 12 | 11 | XMP-147: Development of L-mode fiducial shot XMP-142: Reduced MHD H-mode Development | Delaye start on leak recovery. Missed shot on Ops error. |
| 4/8/16 | 8.83 | 290.72 | 7.27 | 24 | 24 | XMP-142: Reduced MHD H-mode Development XMP-148:BEAST Validation | Extra Test time for GDC. Down for Water trip |
| Week's End | | 290.72 | 7.27 | | | | |
| 5/2/16 | 0.07 | 290.79 | 7.27 | 1 | 1 | | Test/Recovery day only. One D2 fiducial plasma at end of the day |
| 5/3/16 | 4.43 | 295.22 | 7.38 | 11 | 11 | XMP-150: Helium Density Scan for Zeff Calibration XMP-152: Improved dr-sep control and reEFIT checkout XMP-106: Magnetic Calibration | Down for PCS/Snap in TC. Test time for XMP-106 |
| 5/4/16 | 6.03 | 301.25 | 7.53 | 17 | 17 | XMP-150: Helium Density Scan for Zeff Calibration XMP-152: Improved dr-sep control and reEFIT checkout | Extra test time. Down for RTC. Time for NB conditioning |
| 5/5/16 | 8 | 309.25 | 7.73 | 21 | 20 | XMP-151: L-Mode development | Down for RF/PCS/Water/Cat 4 to 2 Loop Fit. Missed shot on DCPS |
| 5/6/16 | 8.95 | 318.2 | 7.96 | 28 | 26 | XMP-142: H-mode scenario development XMP-151: L-Mode development | PCS AM reset. Missed shots on fizzle/DCPS |

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| Week's End | | 318.2 | 7.96 | | | | |
|-------------------|------|---------------|--------------|-------------|-------------|---|--|
| 5/9/16 | 8.66 | 326.86 | 8.17 | 28 | 27 | XMP-142: Reduced MHD H-mode Development XMP-141 Error field correction proportional to loop voltage | Missed shot on fizzle. |
| 5/10/16 | 5.87 | 332.73 | 8.32 | 16 | 14 | XMP-149: MSE Diagnostic Neutral Beam Checkout XMP-142: Reduced MHD H-mode Development | Subtract for MSE-LIF. Down for GIS/Water. Missed shot for Fizzle/FCPC. |
| 5/11/16 | 8.53 | 341.26 | 8.53 | 27 | 26 | XMP-142: Reduced MHD H-mode Development XP-1506: Low-beta error field correction | Controlled access for NB-1A source isolation valve. Missed shot on Level 1 Fault. |
| 5/12/16 | 6.52 | 347.78 | 8.69 | 18 | 18 | XMP-153: H-mode access and control development XMP-151: L-Mode development | Down for Water/FCPC. End early for SPA2 repair |
| 5/13/16 | 9.22 | 357 | 8.93 | 28 | 26 | XMP-153: H-mode access and control development XMP-151: L-Mode development | Missed shots on DCPS trip/Controls |
| Week's End | | 357 | 8.93 | | | | |
| 5/20/16 | 2.76 | 359.76 | 8.99 | 6 | 6 | XMP-154: Plasma Gap Control | Ended operation early to investigate PF1A U lead area movement |
| Week's End | | 359.76 | 8.99 | | | | |
| 6/21/16 | 3.57 | 363.33 | 9.08 | 8 | 8 | XMP-154: Inner Gap Control Checkout | Delayed start/testing for PF1A Recovery & NTC humidity. Down for Cat 2 Loop Fault. |
| 6/22/16 | 8.2 | 371.53 | 9.29 | 23 | 23 | XMP-153: H-mode access and control development XMP-141 Error field correction proportional to loop voltage | Controlled Access/Down for Cat 2 Loop Fault |
| 6/23/16 | 9.2 | 380.73 | 9.52 | 27 | 27 | XMP-141 Error field correction proportional to loop voltage | |
| 6/24/16 | 5.64 | 386.37 | 9.66 | 18 | 18 | XMP-153: H-mode access and control development XMP-141 Error field correction proportional to loop voltage | Down for FCPC breaker issue. |
| Week's End | | 386.37 | 9.66 | | | | |
| 6/27/16 | 8.7 | 395.07 | 9.88 | 30 | 30 | XMP-153: H-mode access and control development XMP-141 Error field correction proportional to loop voltage | Delayed start to set NB Cal. Down to reboot TVPS |
| 6/28/16 | 7.46 | 402.53 | 10.06 | 21 | 20 | XMP-153: H-mode access and control development XMP-110: FIDA / ssNPA / sFLIP checkout | Controlled Access/Down for NB2. Down for PF1A. Missed shot on NB2 |
| Week's End | | 402.53 | 10.06 | | | | |
| Totals | | 402.53 | 10.06 | 1167 | 1066 | | |
| | | Run Hours | Run Weeks | Attempts | Plasmas | | |