MDT AI 26 AND 27 CLOSURE

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BATTERY SOC AND OFF-SUN DURATION CONSTRAINTS IN AEROBRAKING

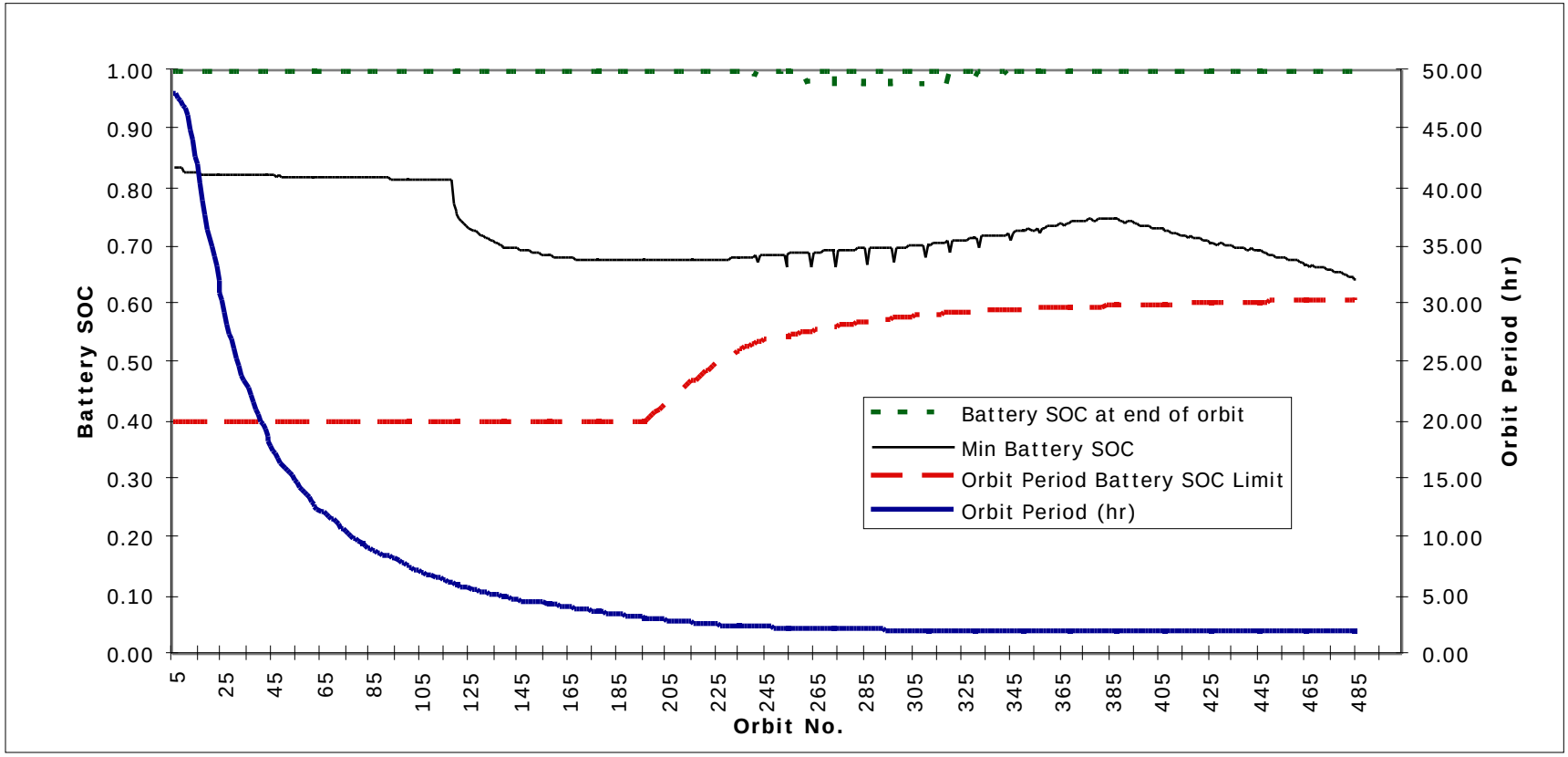
- AT MISSION CDR 40 % BATTERY SOC DEFINED AS MINIMUM FUNCTIONAL LIMIT
  - EQUIVALENT TO AN 81.53 MIN OFF SUN DURATION

- AT THE 3 HR ORBIT PERIOD, THERE IS INSUFFICIENT ON-SUN TIME TO RECHARGE THE BATTERIES FROM 40% TO 100%

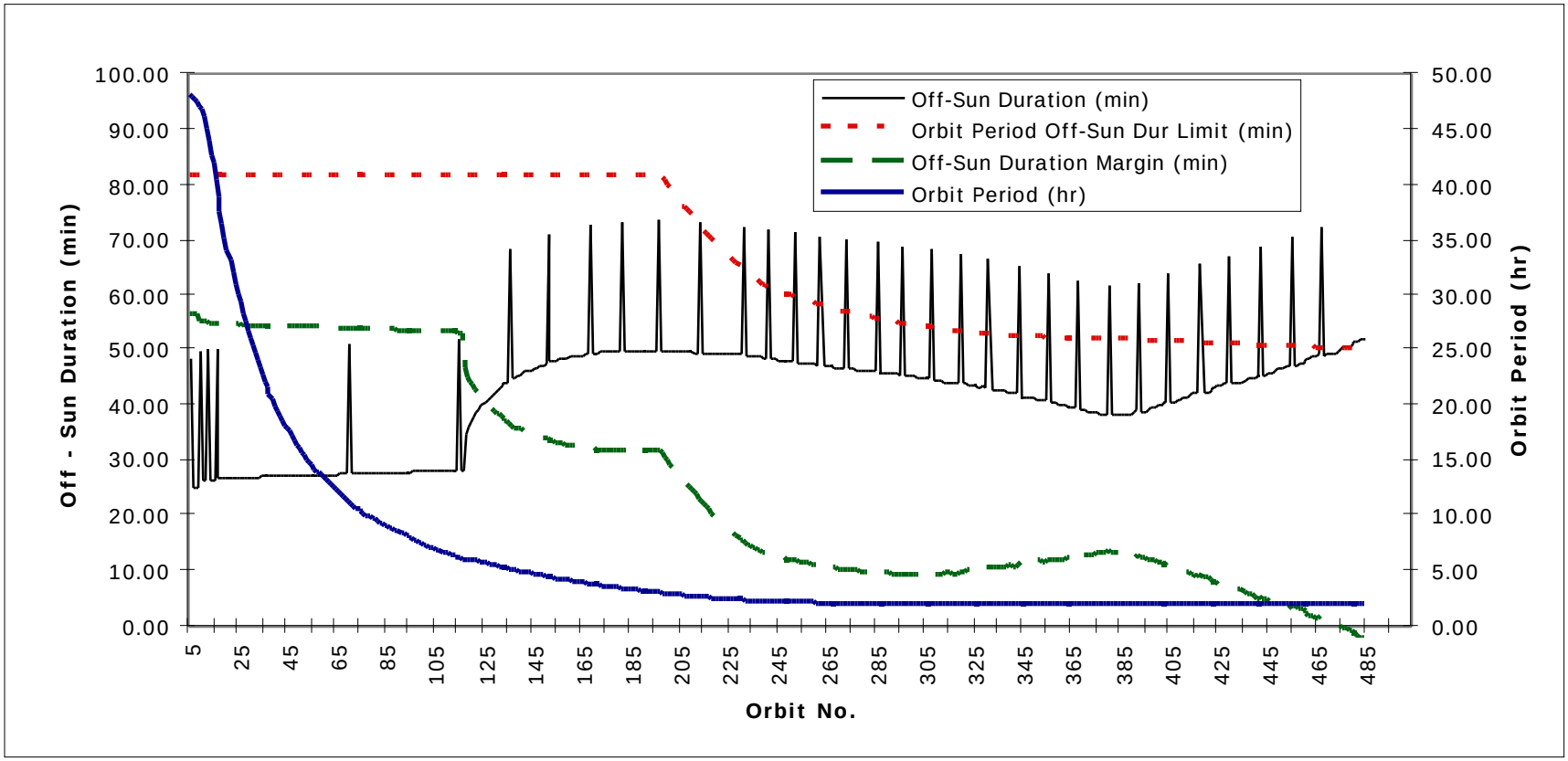
- THE FOLLOWING PLOTS SHOW THE MAXIMUM OFF-SUN DURATION AND MINIMUM BATTERY SOC VS ORBIT PERIOD, TO ENSURE THAT THE BATTERIES ARE FULLY CHARGED AT THE END OF EACH ORBIT

- PLOTS ALSO SHOW HOW CHANGING THE SOLAR ARRAYAZIMUTH ANGLES AFFECTS THESE LIMITS

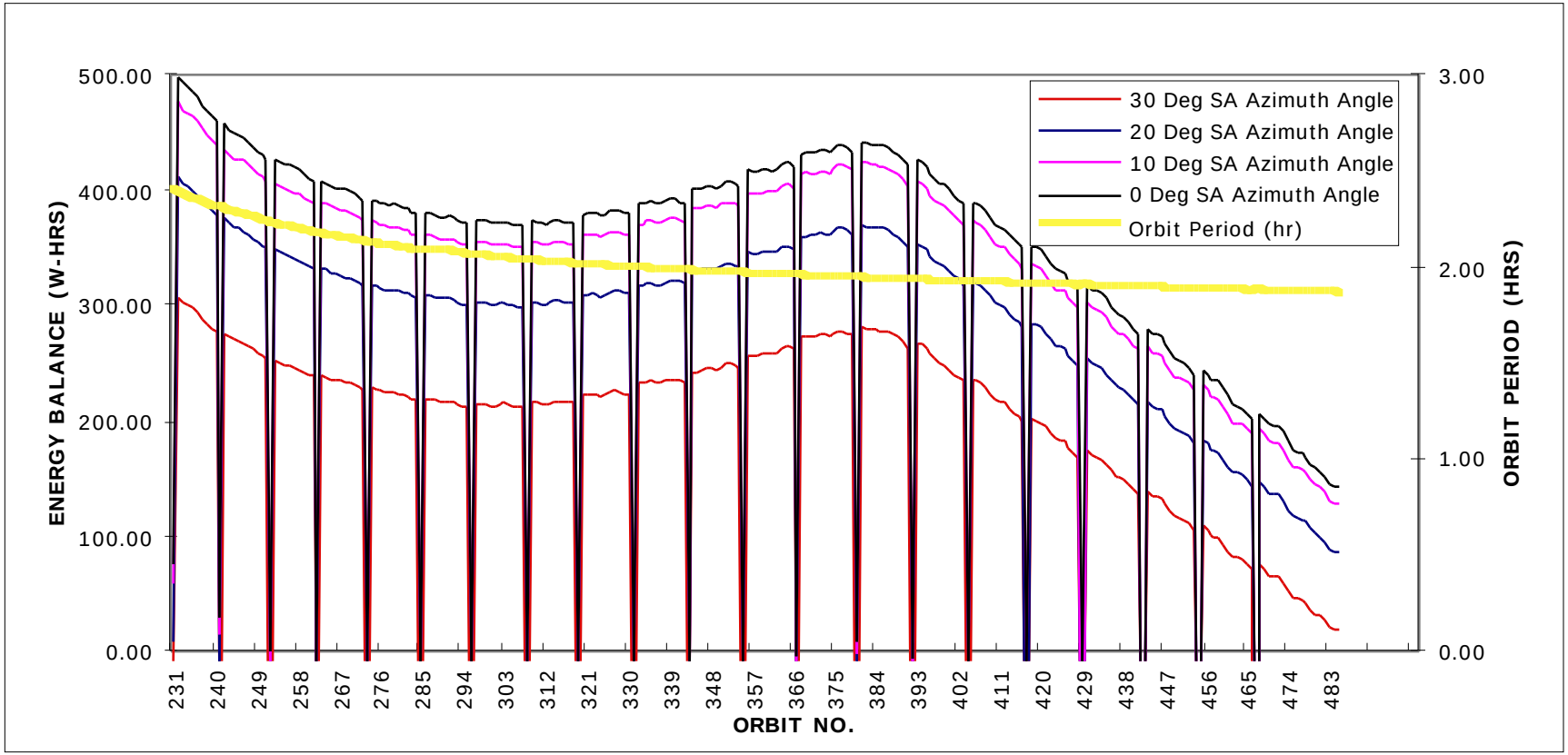
BATTERY SOC LIMIT VS ORBIT PERIOD (CDR-OPEN LAUNCH CASE)



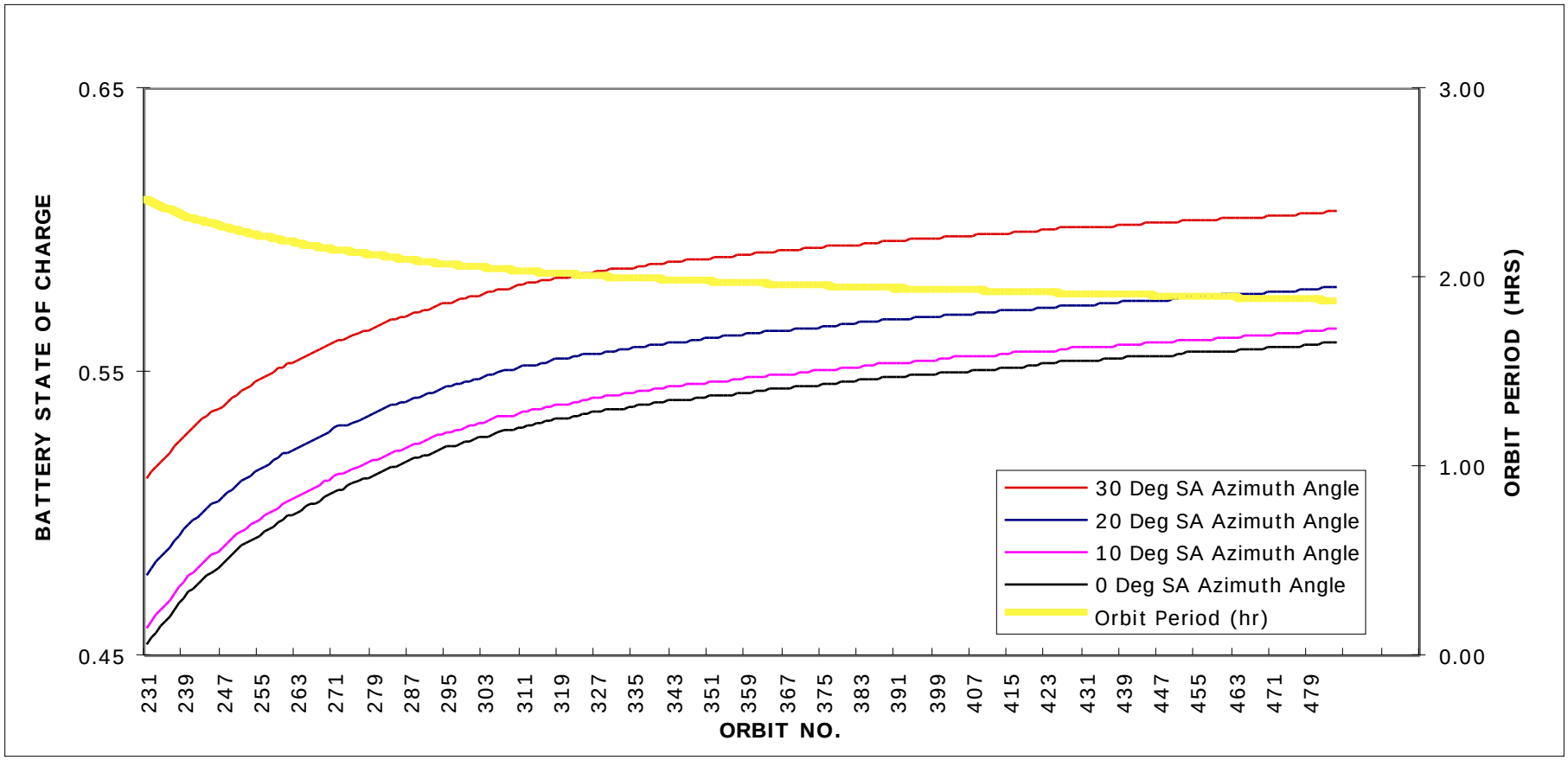
OFF SUN DURATION LIMIT VS ORBIT PERIOD (CDR-OPEN LAUNCH CASE)



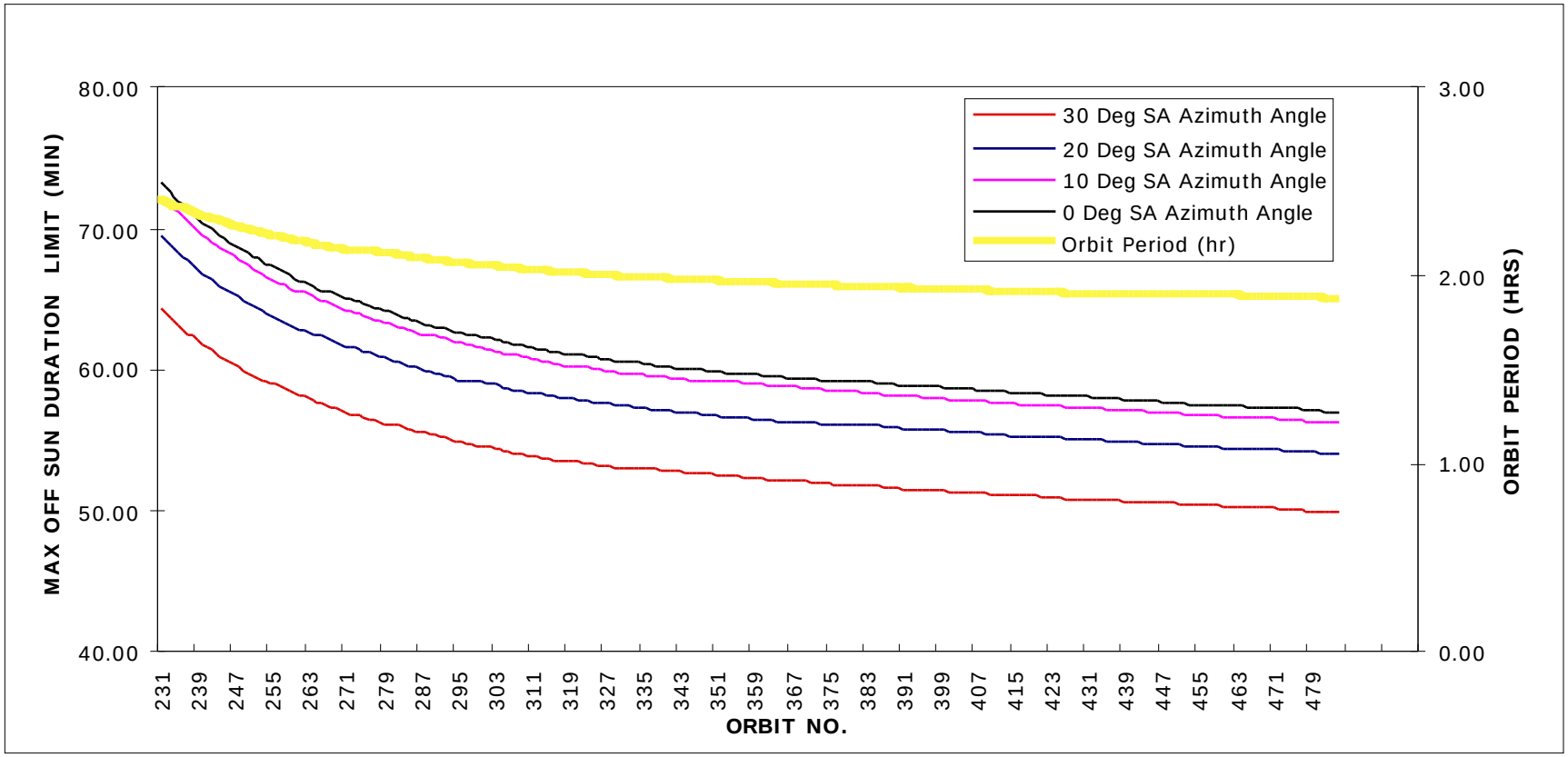
ENERGY BALANCE VS ORBIT PERIOD
(CDR-OPEN LAUNCH CASE)



MINIMUM BATTERY SOC VS ORBIT PERIOD



MAXIMUM OFF SUN DURATION VS ORBIT PERIOD



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