Change Description

With the recent approval of the WSPOW0002A RTS file, and the desire to execute WSPOW00000, WSPOW0002A and WSVIDALLDN commands independent of command loads, the Non-Load Event Tracker (NLET) GUI and Backstop History programs were modified to allow processing of these thermally consequential, non-load events. Also, calls to os.system were replaced, and comments were updated and/or improved.

In addition, since the 2017 introduction of the NLET history assembly system, there have been two occasions where long shutdowns had multiple non-load events (e.g. Long Term CTI measurements and spacecraft maneuvers) which were not properly processed by the NLET system. The thermal prediction was accurate, but the event processor was modified to correctly process those multiple events.

Lastly, the RecordNonLoadEvent.py software was upgraded and tested to run under Python3.

This set of Release Notes covers changes to both the NLET GUI and the NLET Backstop History programs.

Files Changed:

The changes can be seen here:

https://github.com/acisops/nlet_gui/pull/3

https://github.com/acisops/backstop_history/pull/5

Testing:

The NLET GUI was tested by exercising all possible operations, including the new Power Command capability, and checking the resultant output file for results.

The NLET Backstop History changes underwent module testing via stand alone programs which called the various methods necessary to construct a load history. These stand alone programs tested all 4 load types. Emphasis was given to testing the two aforementioned loads.

System testing was accomplished by running both the ACIS 1DPAMZT and Focal Plane models on 19 different loads.

All 4 forms of loads were tested:

- Full Stops (No Science or Maneuver load running)
- SCS-107 (Science load stopped; Maneuver load running)
- TOO

Normal

Whenever a TOO, SCS-107, or Full Stop load was used as test, the following Normal weekly load was also tested to stress the history assembly which includes the previous non-normal load.

These loads are:

1) MAR0617 (Normal)
2) MAR0817 (STOP)
3) MAR1117 (STOP)
4) MAR1517 (TOO)
5) MAR2017 (Normal)
6) MAR2717 (Normal)
7) APR0217 (STOP)
8) APR1017 (Normal)
9) SEP1317 (SCS-107 RTS load)
10) SEP1817 (Normal)
11) JAN1918 (TOO)
12) JAN2918 (Normal)
13) OCT0118 (Normal)
14) OCT0818 (Normal)
15) OCT2118 (STOP)
16) OCT2418 (Normal)
17) SEP0219 (Normal)
18) SEP0619 (STOP)
19) SEP0919 (Normal)

Predictions made by the two models using the software updates were compared to those made by the old models. Predictions matched where expected and history assembler improvements resulted in correct histories for the two occasions mentioned above.

Interface impacts:

None

Review:

ACIS Ops

Deployment Plan:

Deploy as soon as this week's load is activated.