Programs that select missions through the AO process have sometimes adopted streamlined management structures, with NASA oversight, review and reporting requirements reduced to those which are essential to ensure agreed-upon science return in compliance with committed cost, schedule, and performance requirements and incorporating mandatory NPR 7120.5 requirements for the class of mission. However, increased responsibility can be given to the PI only when satisfactory capability for management and control of key resources (schedule, cost, performance) can be demonstrated. In addition, these management changes will likely require approved waivers. Waivers that significantly increase risk to project success will be looked upon with disfavor unless the project demonstrates alternate risk mitigation strategies.

Program waivers must be documented in the Program Plan. This particularly includes any that apply to all projects in a multi-project program. Project-specific waivers, if not contained in the Compliance Matrix, will need to be documented in the relevant mission-specific PLRA to the Program Plans and in individual Project Plans.

5.8 Mission Extension or Termination

All projects eventually come to an end. Sometimes this occurs due to failure of operating flight hardware. For those that continue functioning, near the end of their prime operational mission, and again near the end of any previously extended mission, each operational project is subject to a Senior Review to determine the scientific value and priority of a further mission extension. Those that do not receive a positive outcome for continuation are subject to termination. Mission termination is the process for ending a project that has conducted all, or a part of, its entire prime mission and may have completed one or more extended missions. This is different than mission cancellation (see Section 5.8.2, Budget Control, Descope, and Cancellation), which refers to ending project activity in Implementation before the mission is launched, or mission non-confirmation (see Section 5.5.1, Project Approval), which refers to ending project activity while in Formulation.

There are two paths that lead to mission termination:

- A programmatic path, such as the outcome of a Senior Review or a significant budget reduction.
- As a result of a condition on the spacecraft, which may be an unexpected on-orbit anomaly, or the exhausting of consumable resources.

A baseline End-of-Mission Plan was required to have been established before launch to define termination activities for missions under normal conditions. When considering a termination directive, this baseline termination plan may need to be revisited because the planned method of termination may no longer be available. For example, the Flight Operations Team may have lost full control of the satellite and cannot execute a controlled de-orbit as originally planned.

5.8.1 Senior Review

Upon completing a mission's prime phase activity (Phase E), a mission may be eligible to continue its science program and extend its operations. There are several justifications that may be applicable for seeking approval for a mission extension. Examples include the completion of the mission's Level-1 requirements (which is likely to require approval of the DPMC) or mission extension is justified as being in the best interests of the Nation and NASA.

National interests may include the mission becoming vital to the success of programs run by other Federal departments or agencies. An example may be the use of a mission's data in terrestrial or space weather predictions by the National Oceanic and Atmospheric Administration. In the case of NASA's best interest, a mission may be extended if its data are part of compelling and vital science investigations that contribute to achieving NASA's strategic goals. In all cases, the PE and PS for the operating mission will work with the program and Project Managers to assemble a decision package for the Director of the appropriate SMD Division that will support the extended mission phase. Often the Senior Review process is an appropriate method for developing the inputs to such a decision package.

A Senior Review is conducted every two years in each of the science research areas within SMD. The Senior Review is a science peer review that assesses the value of extending further mission operations. The intent of the Senior Review process is to maximize the scientific return from these programs within finite resources. The Senior Review provides inputs toward "re-balancing" the elements of the MO&DA portfolio. (It is not a review leading towards the selection of new capabilities or research as is the case for solicited programs under NASA AOs and NRAs.) The DD of the science area under review uses the evaluations and findings from these comparative reviews to define an implementation strategy and give programmatic direction to the missions and projects concerned for the next two to four fiscal years.

A Senior Review panel consists of senior scientists who are established and respected members of the particular science community served by the missions under evaluation. In response to terms of reference that are provided by the convening SMD Science DD, this panel will review and evaluate science proposals for extending missions that are either completing their prime phase (Phase E) or were previously extended. The panel will rate the proposals as to scientific merit, based on their extended mission objectives and capabilities, using the standards and metrics that are provided in the terms of reference. Engineering factors such as the state of health of the spacecraft or alternative trajectories may be considered. The principal product from the Senior Review is the report written by the panel. The report represents the panel members' findings and evaluations for each of the submitted proposals as well as an ordered list of the projects based on the panel's assessment of the science value that would result from extending the mission. Projects at the top of the list are likely to get funded for mission extensions; those at the bottom may be terminated if there is insufficient funding to extend all scientifically productive missions. Using this input, the SMD Science DDs decide which missions to extend and at what funding level, based on available budget. The panel's report often provides findings that the DD may use in formulating direction to the mission for the approved extension. These directives could include terminating one or more instrument teams of the mission, providing priority on the elements of the mission's science plan, revised budgets for the mission's extended phase, etc.

If the outcome of a Senior Review or of other programmatic factors, such as a significant budget reduction, is that a project is not recommended for continued funding and therefore must be terminated, the PE develops a termination recommendation letter for SMD AA review and approval. (See Section 5.9.3 below)