

National Aeronautics and Space Administration
Langley Research Center
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Hampton, VA 23681-2199



March 21, 2019

Reply to Attn of: 401

TO: Center Directives Manager
Langley Research Center

FROM: 401/David F. Young, Director, Science

SUBJECT: Memo Authorizing Continued Use of Expired Langley Directive,
LPR 7510.1 Project Initiation and Proposal Procedural Requirements
Expiration date: February 28, 2019

REF: A. NASA Requirement Waiver for NPR 1400.1 (3.5.2.6), NRW 1400-37

In accordance with reference A, I authorize the continued use of the expired subject directive.

LPR 7510.1 Project Initiation and Proposal Procedural Requirements

The subject directive has been reviewed prior to the expiration date and a summary of the required changes is:

This directive, which has been in place for over 10 years, is in the midst of a major rewrite to reflect the Center's current operating model and improved processes. The current (expired) LPR will be divided into two new distinct documents—one which covers Proposal Procedural Requirements and one which will cover Project Initiation Requirements. The current (expired) LPR will be cancelled.

The directive was also assessed for the risk of continued use after expiration versus the risk of not having the directive available after expiration. The results of that risk assessment are: *There is no risk to continuing use after the expiration date. The Center will continue to follow the processes required in this LPR until the new directives are reviewed and in place.*

Justification for the delay is:

This LPR is in the midst of a major rewrite and will be divided into new two distinct documents—one which covers Proposal Procedural Requirements (to be owned by the Proposal Development Office (PDO)) and one which will cover Project Initiation Requirements (to be owned by the Project Support Office (PSO)). The owning organizations had a target completion date for these rewrites of December 2018; however, this date was overcome by other critical activities, time lost because the Government shutdown, and the PSO's plan to pilot the Project Initiation Process prior to submitting the revised LPR for approach.

The updated directive is scheduled to be submitted for Center-wide review as follows:
Proposal Procedural Requirements—August 1, 2019
Project Initiation Requirements—August 1, 2019



Langley Research Center

LPR 7510.1B

Effective Date: March 24, 2014

Expiration Date: February 28, 2019

Project Initiation and Proposal Procedural Requirements

National Aeronautics and Space Administration

PREFACE

P.1 PURPOSE

- a. Langley Research Center (LaRC) conducts research and develops technologies for space exploration, for advancing the understanding of the Earth's climate, for understanding atmospheres on other planets, and for improving air transportation. All work is accomplished through projects of various sizes conducted for NASA's Mission Directorates, for other government agencies, for industry, and for academic institutions.
- b. This procedural requirement describes four reviews that will be used to plan projects, to submit proposals for new projects and to begin all new projects or portions of projects conducted by LaRC. This includes any new work at LaRC – directed, reimbursable or proposal work.
- c. For purposes of this procedural requirement, a "project" has defined requirements, a life-cycle cost, a beginning and an end, and requires an investment by LaRC.
- d. The documentation recording decisions from the reviews shall be maintained by the sponsoring Product Unit.
- e. Waivers to requirements outlined in this Langley Procedural Requirement (LPR) shall be approved by the appropriate Decision Authority and shall be maintained by the sponsoring Product Unit (PU).

P.2 APPLICABILITY

- a. The four reviews identified in this process are required for the initiation of all projects to be conducted by LaRC. This Center procedural requirement supplements other NASA policies, procedural requirements, and regulations as well as Center-level requirements.
- b. The scope and content of the four reviews, as outlined in this procedural requirement, are appropriate for projects of more than \$25M, such as large space missions. At the discretion of and as outlined in writing by the appropriate Decision Authority, the content and structure of each review can be streamlined to best meet each project's requirements.

P.3 AUTHORITY

- a. NPD 1050.1, "Authority to Enter Into Space Act Agreements"
- b. NPD 1370.1, "Reimbursable Utilization of NASA Facilities by Foreign Entities and Foreign-Sponsored Research"
- c. NPD 7120.4, "NASA Engineering and Program/Project Management Policy"

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. NPR 7120.5, "NASA Space Flight Program and Project Management Requirements"
- b. NPR 7120.8, "NASA Research and Technology Program and Project Management Requirements"
- c. NASA FMR Volume 16, "Reimbursable Agreements"

P.5 MEASUREMENT/VERIFICATION

For projects of more than \$25M, Office of Strategic Analysis, Communication and Business Development (OSACB) will provide a report on the Project Initiation process followed. This report will be provided to the Center Leadership Council (CLC) following the project Center Commitment Review. This information will be used to verify involvement of the appropriate Center organizations and the proper scrutiny given the project to enable the Center to deliver on the project commitment.

P.6 CANCELLATION

LPR 7510.1, dated March 19, 2009

Original signed on file

Virginia C. Wycoff
Acting Associate Director

DISTRIBUTION:

Approved for public release via the Langley Management System; distribution is unlimited.

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1. INTRODUCTION

1.1 Decision Authority

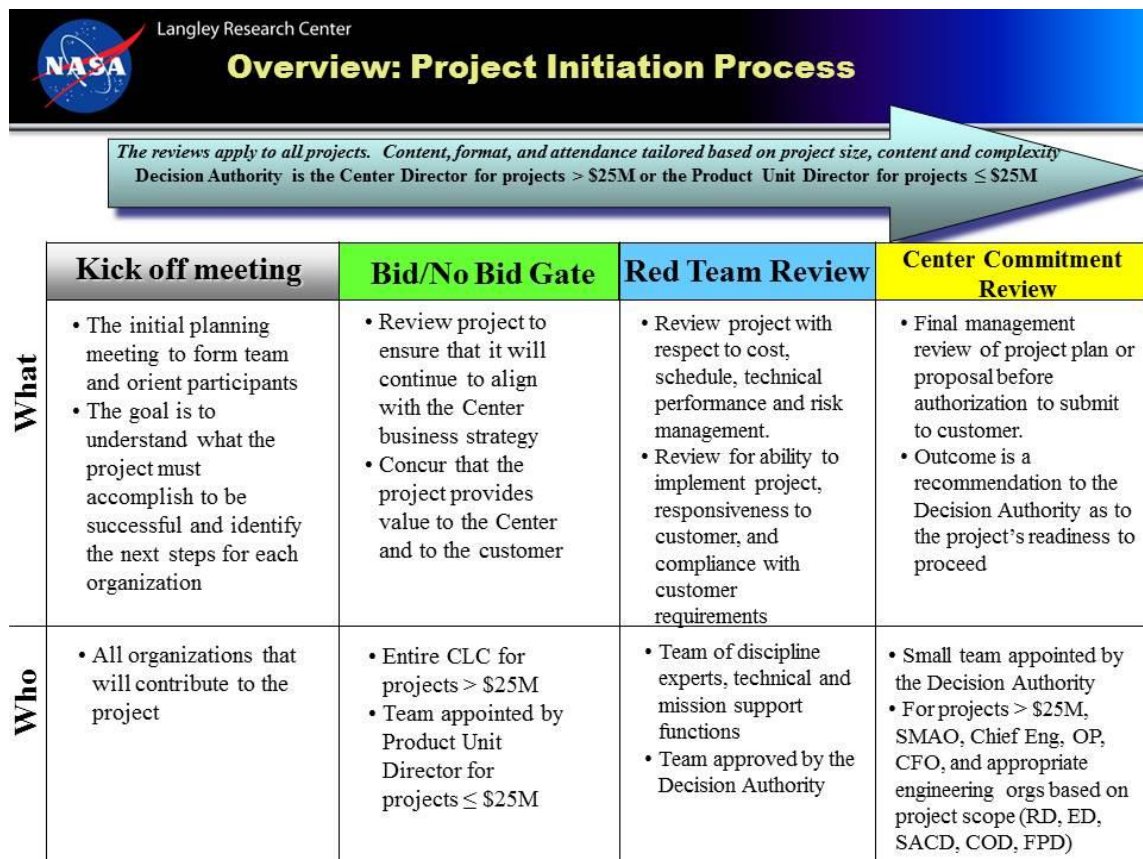
a. The Langley Center Director or a person designated by the Center Director is the Decision Authority for projects valued at more than \$25M, (total life-cycle cost including all centers/partners and contributions). For projects valued at less than or equal to \$25M, PU Directors (PUDs) may be the Decision Authority for projects within their respective areas.

b. The Directors for the Aeronautics Research Directorate (ARD), the Space Technology and Exploration Directorate (STED), and the Science Directorate (SD) are the PUDs at Langley Research Center (LaRC).

1.2 Overall Process

a. The overall Project Initiation process is depicted in figure 1, Overview: Project Initiation.

Figure 1. Overview: Project Initiation



- b. All projects shall perform each of the four reviews: Kick-Off Meeting, Bid/No Bid Gate, Red Team Review, and Center Commitment Review (CCR).

2. KICK-OFF MEETING

2.1 Purpose

- a. The Kick-Off Meeting is the initial review in the Project Initiation process. It is used to formalize the team and orient the meeting participants to a project the Center will be undertaking. The goals are to develop a solid understanding among the contributing organizations of what the project must accomplish to be successful, and to identify how each organization will support the team after the Kick-Off Meeting.
- b. A meeting should be scheduled as soon as the draft Broad Agency Announcement (BAA) is released or as soon as LaRC is aware of a forthcoming opportunity (e.g., in working with the Advanced Exploration Systems Program, LaRC learns that a lightweight structural component project will be needed, or an aircraft manufacturer contacts ARD to initiate discussions on providing wind tunnel support for an advanced hypersonic transport project). The BAA includes Announcements of Opportunity (AO), NASA Research Announcements (NRA), and other forms of announcements approved by the Assistant Administrator for Procurement (Code HS), as well as BAAs issued by other Government agencies.

2.2 Attendees

- a. Meeting participants should include the Sponsoring PUD, the Principal Investigator, the Proposal Manager and/or Project Manager, and OSACB.
- b. Depending on the content and scope of the project, other participants could include any Center organization, including the Science Team, representatives from the appropriate engineering organizations, and representatives from the appropriate Business organizations: Office of Procurement (OP), Office of Human Capital Management (OHCM), Center Operations Directorate (COD), Office of Chief Counsel (OCC), Office of the Chief Financial Officer (OCFO), etc). Flight Projects Directorate (FPD) should attend if this activity is a new-start flight project.

2.3 Entry Criteria

- a. The Sponsoring PU has determined that the project aligns with the PU and the Center business strategy. It is preferred that the sponsoring PU will have presented the project idea at a CLC Technical Portfolio meeting.
- b. A draft or final BAA has been released, the Center has credible information that a BAA opportunity will occur, or the Center has been contacted about a potential business opportunity.
- c. The team has received approval from the sponsoring PU to begin work and to address the requirements for a Kick-Off Meeting.

2.4 Meeting Agenda/Description

- a. The meeting should last no more than four hours and should begin by reviewing the LPR 7510.1 process with all parties.
- b. The meeting should be led by the Project or Proposal Manager. If the project is in response to a competed opportunity, the Proposal Manager should become the Project Manager when the Center wins the work.
- c. The Principal Investigator and Project Manager should present (1) an overview of the BAA or the opportunity; (2) a description of the project LaRC will develop in response to the customer, including science/technical requirements, potential non-governmental partners, and potential conflicts of interest; (3) an outline of the Center resources and the requirements to develop a project plan or proposal, including planning team personnel, budget and space requirements; and (4) a plan for developing an approved cost estimate prior to the CCR that reflects the Center's current pricing strategy as described in Appendix C.
- d. The sponsoring PU should present a completed Independent Cost Estimate/Independent Cost Assessment (ICE/ICA) checklist. The purpose of the checklist is to assess the project's scope, complexity, and size. While there is no clear delineation of when an ICE/ICA is required, the more boxes selected on the checklist, the more likely an ICE/ICA will be required. The ICE/ICA checklist includes:
 - (1) Is the project's life cycle cost more than \$25M?
 - (2) Are other Centers, government agencies, or international partners involved?
 - (3) Is the project critical to future business?
 - (4) Is the work on the critical path of a program or project?
 - (5) Are hardware or software deliverables expected?
 - (6) Are new facility capabilities needed?
 - (7) Is more than one Mission Directorate providing funding?
 - (8) Are there more than three LaRC organizations involved in implementation?

2.5 Outcomes

- a. The Lead for the Kick-Off Meeting (the Project or Proposal Manager) will record meeting participant concurrences. Concurrence indicates that the Kick-Off presentation is approved as (1) definition of the remainder of the Project Initiation Process, and (2) the project plan outline. A record will also be made of recommended changes to the plan. This record will be provided to the Decision Authority for recommended action.
- b. If non-governmental partners are required, shortly after the kickoff meeting the Project or Program Manager and OP will collaborate on the appropriate method of selecting the partner(s), contract type, level of pricing detail to be requested from the partner, needed award date and strategy for making timely award.
- c. The Project Initiation process requirements are specified (e.g., review structure and content, dates for reviews, Agency-level processes).

d. The cost estimation process requirements are specified, including the process to validate the project cost estimate.

(1) For projects requiring an ICE/ICA, OCFO is responsible for initiating the ICE/ICA.

(2) For projects of more than \$2M and not requiring an ICE/ICA, the PU ensures the project cost estimate is validated and is vetted through the OCFO.

(3) For projects of \$2M or less, the validation method is at the discretion of the PUD.

e. If the project is of \$25M or less, a recommendation, based on the above ICE/ICA checklist factors, can be made that the Decision Authority be elevated to the Center Director.

2.6 Circle-Back Process: Requests for Short Notice Cost Estimates

a. At times, LaRC receives requests for a project cost estimate that must be completed without enough time (seven to 10 days) to complete the Project Initiation process before submittal. For those situations, the Center must provide an integrated response and should consider the general principles used to define the Kick-Off Meeting. Following submittal, the Project Initiation process should be assessed to determine what reviews should be held to ensure that the Center is knowledgeable about the project and can support the work it has offered to perform. This is referred to as a "Circle-Back" process and serves to complete the Project Initiation process.

b. Upon receipt of a request for a quick response Rough Order of Magnitude (ROM):

- (1) The project will quickly make others aware of the request. An alert e-mail (see Appendix B) should be immediately sent to the key parties. At a minimum, the e-mail should be sent to the sponsoring PUD, the appropriate engineering organizations, the Chief Financial Officer, the OSACB Business Development Lead, and the Chief Engineer.
- (2) The cost estimate should be clearly identified as a ROM that has not gone through the Center's official review process.
- (3) After a response has been sent to the customer, the sponsoring PU, in counsel with OSACB, will determine what portion of the Project Initiation process was not covered in the quick response. The sponsoring PU for this activity is responsible for ensuring that these reviews are adequately addressed, enabling the Center to ensure that the project team overlooked nothing in the quick response to the customer.

c. A recommended draft for the alert e-mail is provided in Appendix B. The e-mail subject line should include the following phrase so the e-mail is easily identified as an urgent action: URGENT COST ESTIMATE ACTION: Cost Estimate Due (list date mm/dd/yyyy) to Directorate/Center/Key Individual. The alert e-mail (as shown in the Appendix B draft) should identify:

- (1) needed resources (fabrication, wind tunnels, non-governmental partners, procurements, etc.)
- (2) the NASA Mission Directorate or external customer funding the work
- (3) the assumptions made relating to the project
- (4) if this is a sensitive request or if there is competition sensitivity for the project
- (5) the lead person responsible for the project and the resources point of contact (POC) for this estimate
- (6) any guidance given by the Decision Authority

3. BID/NO BID GATE

3.1 Purpose

- a. The purpose of the Bid/No Bid Gate is to review the project and decide if it continues to have value to the Center and the Customer and that it is a valuable and viable candidate offer for the business opportunity.
- b. There are two additional purposes for this gate:
 - (1) Cross-cutting check: The project should have addressed known resource issues with the appropriate organizations prior to this review. This review allows for final consideration of impacts across the LaRC organizations. (e.g., Are there workforce or other resource issues that the project team may have overlooked?)
 - (2) Awareness/Advocacy: When the project is approved to proceed, the Decision Authority and the organizations involved in the review are responsible for advocating for the approved project. This gate provides the Decision Authority and the reviewing organizations the background knowledge and understanding of the project, so that when asked about the project they can respond positively and with knowledge about the work.
- c. The timing for this gate is immediately after release of a BAA or immediately after notice that a customer is willing to fund a business opportunity.

3.2 Attendees

- a. This review should be given to CLC for projects where the Decision Authority is the Center Director. For projects where the PUD is the Decision Authority, the PUD will appoint a team and should include all OUMs providing resources to support proposal development or project initiation/implementation

3.3 Entry Criteria

- a. The project aligns with the PU and the Center business strategy. It is recommended that the PU provide updates on the project during the CLC Technical Portfolio meetings and include this in the PU business strategy during quarterly revenue reports.

- b. The BAA has been released or the Center has received information that the customer has funding for the business opportunity.
- c. The project team has completed a rough order of magnitude cost estimate based on a conceptual plan. This ROM should reflect the Center's current pricing strategy as described in Appendix C.
- d. Non-governmental partners, if any, have been selected or a strategy for getting them under contract has been developed and reviewed by OP.

3.4 Pre-Review Requirements

- a. Material should be provided to familiarize the review team members with the structure and scope of the customer requirements (e.g., website and summary of BAA).
- b. The schedule for the reviews as established by the sponsoring PU should be provided.
- c. The alignment of this project with LaRC and the PU's business strategy should be described.

3.5 Review Agenda/ Description

- a. This review is typically a 60-minute presentation with an additional 30 minutes for discussion.
- b. If there are multiple LaRC responses to a competed opportunity, there should be a determination on the need to treat these as competition-sensitive. If the responses are considered competition-sensitive, the review team should be reminded that this means the information provided is not to be shared with other teams at LaRC or elsewhere. If there will be more than one LaRC offer for an opportunity, each project team will be given a separate time to present material to the review team. Project team members are not to be present during other teams' presentations. When there are several competing opportunities, CLC discussions should include the impact one team might have on another, including win ability and resource requirements.
- c. The project presentation should include an overview of the proposed total project and Langley's specific role. The intent is to provide the review team with an understanding of the programmatic and technical rationale for submitting the proposal. Topics to consider for the presentation are: the science and/or technical impact, customer advocacy, why LaRC should be involved, (expected revenue to the Center and alignment with LaRC strategy), mission design, technology content, roles and responsibilities, schedule, workforce and budget requirements, new facility capability requirements, and win ability. The presentation should also summarize the business case, including (1) an assessment of what the value would be to the Center if the project were won and (2) identification of the resources that will be required to win the project work.

d. The review team should review the project from the position of the benefit to LaRC and evaluate the project's readiness to develop a viable project plan or proposal. This should include (1) a sound team approach, including partners, (2) a sound project management plan, (3) a sound technical concept, (4) ability to deliver on the intended commitment, and (5) a reasonable assessment of the project's ability to win funding. The discussions should also consider strategic implications, costs and benefits.

3.6 Outcome

a. The Decision Authority will determine if the project is to proceed, proceed with changes, or halt. Any comments, recommendations, or required actions will be provided to the team and will include a due date and Point of Contact (POC).

b. A determination on Space Flight project and AS9100 requirements, including the level of Earned Value Management (EVM) that will be expected, and if the project will be considered critical or complex. This determination will address the level of project plan required.

c. The project cost estimate development will transition to OSACB and should capture the basis of the estimate, including selected partners' ROMs.

d. A determination to proceed will require the OCFO to proceed with the ICE/ICA recommendations determined at the Kick-Off Meeting.

4. RED TEAM REVIEW

4.1 Purpose

a. The Red Team review is conducted by discipline experts who are not directly involved in the project. The entire project should be reviewed for ability to execute with respect to cost, schedule, technical performance and risk, compliance with customer requirements, and ability to persuade the customer to select this project.

b. Typically this review is conducted about two-thirds of the way between the Bid/No Bid Gate and the CCR.

4.2 Attendees

a. The Decision Authority will assign the Red Team Manager. The Red Team Manager should identify a list of candidate members and finalize members with the Decision Authority.

b. Red Team members should consist of discipline experts with relevant skills and experience in reviewing similar types of projects from LaRC and partner organizations. Internal NASA reviewers should not be affiliated with the current project. If practical, external reviewers should be included on the team to provide a more independent perspective. Possible members could include: outside proposal professionals,

business development managers (i.e., individuals that know the customers requirements and concerns), and subject matter experts.

4.3 Entry Criteria

- a. A draft project plan is complete and, when appropriate, a draft proposal is complete.
- b. The project team grassroots cost estimate has been developed using the OSACB basis of estimate (BOE) tool and is consistent with the Center's pricing strategy as described in Appendix C. The project cost estimate considers partner's proposed price which includes sufficient detail to explain all costs proposed.
- c. Acquisition considerations have been addressed for each potential contractor (e.g., how partners were selected, contract type, needed award date and strategy for making timely award).

4.4 Review Guidelines

- a. The time required for this review is typically a function of the level of effort required by LaRC to implement the project. The Red Team manager will recommend the timeline for the review.
- b. The OSACB coordinates with the Decision Authority and supports the sponsoring PU in the management of Red Team reviews.
- c. The typical Red Team is responsible for:
 - (1) evaluation of the proposal/project technical, management, and cost sections;
 - (2) recommendation of improvements or changes; and
 - (3) evaluation of the project against guidelines provided by the customer or against the evaluation factors listed in the solicitation.
- d. Tasks for Red Team Manager typically include:
 - (1) Establish the Red Team review timeline and a list of candidate members. Review this with the Decision Authority.
 - (2) Finalize the review timeline and members.
 - (3) Review the entire proposal and/or project with the Red Team members for compliance with the customer request.
 - (4) Review written proposals with the Red Team members for the proposals ability to persuade the customer to select it.
 - (5) Review the entire proposal and/or project with the Red Team members for the Center's ability to execute with respect to cost, schedule, technical performance and risk.
 - (6) Conduct an in-depth review of each section with the Red Team, noting strengths and weaknesses, identifying areas that require clarification, providing recommendations, and for proposals, scoring an evaluation form.
 - (7) Compile the review team comments into a single response.

- (8) Debrief the project team.
- (9) Coordinate with the project team to complete the actions from the Red Team review.
- (10) Attend the CCR to discuss disposition of Red Team comments.

4.5 Proposal Evaluation Form

a. When a proposal is to be submitted in response to a BAA, the Red Team Manager should develop an opportunity-specific evaluation form based on the requirements outlined in the solicitation. When a written plan is to be submitted to a customer, following best practices means including the evaluation in the Red Team review. In general, the evaluation form should include the following factors:

- (1) Organization and Emphasis
 - (a) Does the content and organization align with the outline in the customer's solicitation?
 - (b) Are all the main ideas upfront in each section? Are they summarized at the end of each section?
 - (c) Is the text logical and easy to follow?
- (2) Win Themes and Strategies
 - (a) Does the proposal effectively present the value of our solution?
 - (b) Does the response emphasize our strengths and mitigate our weaknesses?
 - (c) Does the response ghost (or address) the competition's weaknesses?
- (3) Compliance and Responsiveness
 - (a) Is every requirement in the solicitation addressed?
 - (b) Do the answers echo the customer's language?
 - (c) Does the document comply with any page count limitations?
- (4) Appearance and Presentation
 - (a) Is the document's appearance professional?
 - (b) Is all of the information presented correctly (dates, names, etc.)?
 - (c) Are the figures and tables correctly numbered?
 - (d) Do all of the page numbers and figure/table numbers cross-reference?
- (5) Consistency and Brevity
 - (a) Have extraneous words, sentences, paragraphs, visuals, or data been eliminated?
 - (b) Were consistent terms and abbreviations used?
 - (c) Do the writing styles match? Does it seem as though one person wrote the entire proposal/plan?
- (6) Visuals
 - (a) Do visuals and text complement one another?
 - (b) Are visuals simple and uncluttered?
 - (c) Are visuals at the appropriate level for the expected reviewer?
 - (d) Does each visual have a clear message?
 - (e) Was each visual introduced in the text before it appears?
 - (f) Do they illustrate the major benefits for the customer emphasized in the bid?
 - (g) Do they reflect the overall proposal strategy?

4.6 Outcome

- a. The findings of the Red Team shall be documented and provided to the project team within a week of the review and to the CCR Chairperson (see Figure 1, Overview: Project Initiation, and Chapter 5, of this LPR, Center Commitment Review).
- b. The documented findings shall include changes recommended to the project plan, areas in need of clarification, and improvements recommended to any written proposal.

5. CENTER COMMITMENT REVIEW (CCR)

5.1 Purpose

- a. The CCR is the final management review in the Project Initiation process and provides recommendations to the Decision Authority on the readiness of the project to be implemented.
- b. Typically the review should be conducted at least one (1) week before the submission date of the proposal or project.

5.2 Attendees

- a. The CCR Chairperson will be appointed by the Decision Authority and will usually represent the organization that will be responsible for managing the project during implementation. For example, if FPD is to implement the project, then FPD would chair the CCR Board.
- b. Recommended members of the CCR Board:
 - (1) Directors from the sponsoring PU (or their representative)
 - (2) Directors from the appropriate engineering directorates (or their representative)
 - (3) Director of Safety and Mission Assurance (or representative)
 - (4) Chief Engineer (or representative)
 - (5) Office of Strategic Analysis, Communications and Business Development
 - (6) Center Chief Technologist (for all Space Technology Mission Directorate opportunities)
 - (7) Office of Procurement (if non-governmental partners are part of the proposal)
 - (8) Chief Financial Officer
- c. Other organizations recommended as invitees:
 - (1) Office of Chief Counsel
 - (2) Other engineering directorates
 - (3) Center Operations Directorate

- d. The Chairperson may choose to add additional CLC members to the Board or as participants depending on the scope and the nature of the project.

5.3 Entry Criteria

- a. Prior to reaching the CCR, the project team shall have:
- (1) Passed a Bid/No Bid Gate.
 - (2) Conducted a Red Team or equivalent review of the technical and management approaches/plans, schedule, and cost estimate.
 - (3) Developed a validated project cost estimate using the method approved at the Kick-Off Meeting.
 - (a) If an ICE/ICA was required, a reconciliation of the ICE/ICA and the project cost estimate shall be completed. In addition, the Center pricing strategy baselines (Appendix C) should be reviewed and the PU shall concur with the overall project pricing strategy presented at the CCR.
 - (b) If an ICE/ICA was not required and the project is greater than \$2M, the project cost estimate shall be validated, and vetted through the OCFO.
 - (4) Developed a procurement approach for major acquisitions that has been reviewed by the Office of Procurement.
 - (5) Drafted any Space Act or other agreements appropriate to the project and received at least an initial review by OCC.
 - (6) Commitment from the appropriate Branches or Directorate management that detailed workforce requirements are available to support the work.
 - (7) Completed a draft project plan and, when appropriate, a proposal.

5.4 Pre-Review Requirements:

- a. The draft project plan and/or proposal shall be distributed to the CCR Board in its final form. The material should be ready for review and final in all particulars (scope, schedule, budget, workforce, and facilities) to enable Center commitment.
- b. The CCR presentation shall be distributed to the CCR Board in a form that completely addresses each item on the agenda.
- c. The material should be distributed at least 3 working days in advance of the CCR for opportunities valued at \$25M or less and at least 5 working days in advance for opportunities with a value of greater than \$25M.

5.5 Review Agenda/Description

- a. The typical review is a 2-hour presentation followed by a 1-hour discussion period.
- b. The project team will provide an overview of the project, including:
- (1) importance of the project to the Center business strategy.
 - (2) clarity and understanding of the stakeholder goals and requirements.
 - (3) clarity and maturity of any partnerships.
 - (4) clarity of roles and responsibilities.

- (5) project's planned compliance with or expected deviation from NASA and LaRC requirements.
 - (6) adequateness of identified resources required for implementation (workforce, facilities, schedule, and funding).
 - (7) availability of identified resources and the impact on other projects when the resources are provided.
 - (8) the project implementation schedule, the recommended project pricing, and the strategy for the pricing.
 - (9) identification of major and significant risks and a sound risk mitigation plan that has been incorporated into the project plan or proposal.
 - (10) a report on the reconciliation of the project cost estimate with the second validation estimate.
 - (11) actions that Center management needs to take to support this project prior to or subsequent to the customer giving their Authority to Proceed (ATP).
 - (12) disposition of the Red Team comments:
 - (a) a summary of changes since the Red Team review, along with how these changes address issues and recommendations from the Red Team, and
 - (b) a review of all issues or suggestions that are not reflected in changes.
 - (13) disposition of ICE/ICA comments from the Executive Summary.
- d. For projects valued at greater than \$25M, OSACB will report on the Project Initiation process. It is recommended that this report include a statement on which organization will oversee life cycle reviews of the project. It should also include the expected timing for funds to arrive at the Center and identification of the organization who will notify the oversight organization when the work is awarded and the funds arrive at the Center.
- e. The applicability of space flight standards to project implementation should be discussed and a recommendation made to the Decision Authority on the applicability of the standards to the project.
- f. The Center organizations who will be involved in project implementation, should speak on their readiness to implement the project when the work is awarded. This would include a statement that they are ready to staff, commit facilities, and provide other resources on the schedule proposed.
- g. A closing discussion should be held to reach consensus on the recommendation to the Decision Authority.

5.6 Outcomes

- a. A written recommendation from the CCR Chairperson to the Decision Authority on the disposition of the project as determined during the closing CCR discussion. The recommendation can be one the following actions:

1. The Board is fully satisfied, and recommends the project receive authority to submit; possibly with recommendation for supporting action by Center management, or
 2. The Board has some reservation, but recommends the project receive authority to submit, with recommended remedial actions to be completed by the project or the Center after the proposal is submitted, or
 3. The Board has significant reservations, and recommends action(s) to be completed by the project and/or Center, prior to submittal of the proposal, or
 4. The proposal and/or plan is sufficiently deficient that the Board recommends that it not be submitted without significant corrective action.
- b. A written record of the review, findings and recommendations. Generally this is arranged by the CCR Chairperson.

APPENDIX A: ACRONYMS

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| AO | Announcement of Opportunity |
| ARD | Aeronautics Research Directorate |
| ATP | Authority to Proceed |
| BAA | Broad Agency Announcement |
| BOE | Basis of Estimate |
| CCR | Center Commitment Review |
| CLC | Center Leadership Council |
| COD | Center Operations Directorate |
| CP | Center Procedure |
| ED | Engineering Directorate |
| EPR | Estimated Price Report |
| EVM | Earned Value Management |
| FPD | Flight Projects Directorate |
| ICA | Independent Cost Assessment |
| ICE | Independent Cost Estimate |
| JOFOC | Justification for Other than Full and Open Competition |
| LaRC | Langley Research Center |
| LMS | Langley Management System |
| LPR | Langley Procedural Requirement |
| NPD | NASA Policy Directive |
| NPR | NASA Procedural Requirement |
| NTE | not to exceed |
| OCC | Office of Chief Counsel |
| OCFO | Office of Chief Financial Officer |
| OHCM | Office of Human Capital Management |
| OP | Office of Procurement |
| OSACB | Office of Strategic Analysis, Communication and Business Development |
| POC | Point of Contact |
| PU | Product Unit |
| PUD | Product Unit Director(s) |
| RD | Research Directorate |
| ROM | Rough Order of Magnitude |
| SACD | Systems Analysis and Concepts Directorate |
| SD | Science Directorate |
| SMAO | Safety and Mission Assurance Office |
| STED | Space Technology and Exploration Directorate |

APPENDIX B: NOTIFYING PARTIES OF QUICK TURNAROUND COST ESTIMATE

SUBJECT of e-mail: URGENT COST ESTIMATE ACTION: Cost Estimate Due mm/dd/yyyy to Directorate/Center/Key Individual

All,

This is to inform you of an urgent request to submit a Rough Order of Magnitude Cost Estimate for XXXXX. This estimate was requested by XXXXX of Mission Directorate/Center and is **due to XXXXX by COB mm/dd/yyyy**. *(If the Mission Directorate isn't the one who is requesting the cost estimate, add "If this project is selected to go forward, it will be funded by the XXXXX Mission Directorate.")*

XXXXX will be the project person responsible for development of the estimate with support from XXXXX, resources point of contact for this estimate. Due to the short turnaround required, after completion of the cost estimate, the project person responsible will conduct a "circle back" meeting to inform all parties of the actions taken and assumptions made in developing this estimate.

Below is some key information (background and assumptions) being used in this estimate:

- Background
 - Give context to why the quick turnaround and why we are being asked to do the estimate. **Example:** Requested by XXXXX to determine if it would be cost effective to change the manufacture of XXXXX from the contractor to in-house.
- Assumptions
 - Identify any major facilities and/or capabilities required (special laboratories, wind tunnels, fabrication, aircraft, simulators, etc.).
 - Identify in-house/out-of-house assumptions
 - Any guidance from OD that needs to be considered (**example:** Are we following new business process? If not, why?).
 - The potential funding source(s) for this effort.
 - Identify whether the project will be a space flight project (Langley LPR 7120.5 applies) and whether the quality standards of AS9100 apply.

Due to the urgent nature of this request, it is important for all to recognize that not every question can be answered with the desired/required specificity and a "best estimate" is all that is required at this time. We must all be flexible in making assumptions in order to effectively meet the deadline for this request. Therefore, all of our desired checks/balances may not be able to be completed prior to the delivery of the estimate.

Please assist in making this process as smooth as possible by identifying any key personnel who may need to be involved in this estimate, keeping in mind that this action is sensitive in nature and should be shared only with those personnel who have a need to know.

Distribution for all:

TO: Business Development Lead, Office of Strategic Analysis, Communications and Business Development (OSACB)

Cost Analyst Lead, OSACB

Basis of Estimate Tool Developer, OSACB

CFO Budget Strategist, Office of the Chief Financial Officer (OCFO)

CFO Cost Analysis Officer, OCFO

FPD Business Manager, Flight Projects Directorate (FPD)

CC: "alternate" for CFO Cost Analysis Officer, OCFO

"alternate" for CFO Budget Strategist, OCFO

"alternate" for Business Development Lead, OSACB

Information purposes – Director and Deputy Director, FPD

In addition to the above, TOs and CCs for emails based on funding:

Aeronautics Research Mission Directorate Funded Work

TO: Lead Aeronautics Analyst supporting ARD, OCFO

RM Analyst supporting ARD

CC: Information purposes - Director, Aeronautics Research Directorate

Space Technology or Human Exploration and Operations Mission Directorate(s) Funded Work

TO: Deputy Director for Resources, Space Technology and Exploration Directorate (STED)

RM Analyst supporting STED

CC: Information purposes - Director, STED

"alternate" for Deputy for Resources, Business Manager, STED

Science Mission Directorate Funded Work

TO: Deputy Director for Resources, Science Directorate

RM Analyst supporting SD

CC: Information purposes - Director, SD

APPENDIX C: PROJECT PRICING STRATEGY BASELINES

To standardize our pricing strategies, the areas noted below should be considered during the reviews identified in LPR 7510.1. These changes are designed to ensure that the Center optimally delivers on our mission assignments and commitments by ensuring that future financial plans/budgets are commensurately sized with anticipated future costs. The pricing discussions are incorporated into the Project Initiation Process review gates as follows:

a. Bid Gate: The entry criteria is a ROM estimate based on a conceptual plan. The pricing strategy will be discussed and the recommended approach to be used by the project during the development of the estimate will be identified.

b. Red Team Review: The entry criteria is a grassroots estimate developed by the project team and cost estimators for LaRC work, and adequately supported contractor estimates from partners. The Red Team provides a thorough review of the estimate to ensure that all aspects of the project (including the Center pricing strategy) are captured.

- (1) Following the Red Team the Independent Cost Estimate/Independent Cost Assessment (ICE/ICA) will be delivered. The project or proposal team with OCFO should reconcile the ICE/ICA with the Project Estimate; in addition the Center pricing strategy baselines should be reviewed and the PU shall concur with the overall project pricing strategy that will be presented at the CCR. OCFO will validate compliance with the Center pricing strategy.

c. Center Commitment Review: The entry criteria is a cost estimate that has been approved by the PU and reviewed by the OCFO as using sound pricing theory and consistent with Center strategies. During the presentation, the project should include an explanation of any exceptions to baseline pricing practice.

Center recommended pricing baselines: FTE/WYE mix:

- **Baseline:** Center project planning teams should make reasonable efforts to adjust their projected mix of civil servants and contractors to a standard 50 percent civil servants and 50 percent contractors, unless the planned mix is already a greater percentage of contractors than civil servants.
- **Rationale:** The Center's operations model is designed to shift more work to contractors. The Center requires the flexibility to assign civil servants or contractors to optimally achieve future assignments. Contractors generally cost more than civil servants; a 50/50 mix allows future project budgets to have flexibility in workforce assignments.
- **Exceptions:** The PU is responsible for evaluating exceptions requested. If an exception is granted, the determination shall be incorporated into the CCR presentation.

Facilities:

- **Baseline:** Center project planning teams should use the OCFO-published rates (<https://life.larc.nasa.gov/>, "Rate Information") to price the cost of facility occupancy.
- **Rationale:** RD has responsibility for operation of Center facilities and sets the pricing such that the facilities can be operated and maintained in an optimal manner.
- **Exceptions:** The PU is responsible for working with RD to evaluate any exceptions. If an exception is granted, RD determination shall be incorporated into the CCR presentation.

Fabrication:

- Baseline: Fabrication requirements are priced based on FTE using the OCFO-provided rate (<https://life.larc.nasa.gov/>, “Rate Information”) for civil service fabrication labor. There may be additional indirect costs associated with fabrication contracted services.
- Rationale: ED has responsibility for operation of Center fabrication services and sets the pricing such that the services can be maintained and provided in an optimal manner.
- Exceptions: The PU is responsible for working with ED to evaluate any exceptions. If an exception is granted, ED determination shall be incorporated into the CCR presentation.

Technical Services:

- Baseline: Center project planning teams should use the OCFO-published rates (<https://life.larc.nasa.gov/>, “Rate Information”) for pricing the indirect costs of technical services (hardware/software, ACES contractor and above base, lab equipment and facility maintenance, other). Other direct costs not included in Technical Services should be included as appropriate.
- Rationale: Direct costs for ‘extra’ capabilities are often required to accomplish project requirements and are not considered by projects in their cost estimates. Such direct costs could include a variety of items, such as utility cost escalations, software licenses and other miscellaneous items.
- Exceptions: The PU is responsible for evaluating exceptions requested. If an exception is granted, the determination shall be incorporated into the CCR presentation.