

• **Building Inspection Office (BIO)**

- Review and Authorization Manual
2025 Current Revision
- Mark Matthews / Building Code Official / BIO
- 02/06/2025

Agenda

1. BIO WEBSITE
2. REVIEW AND AUTHORIZATION MANUAL
3. CHANGES TO MANUAL FOR 2025
4. CHANGES TO DESIGN AND CODE/SAFETY REVIEW
5. BIO SUBMITTAL REQUIREMENTS 5.2.1 TO 5.2.11
6. APPENDIX B –BIO STAMPS
7. BIO TRIGGERS
8. Q & A

Bio Webpage

WHAT'S ON THE PAGE?

- BIO DOCUMENTS
- ADOPTED CODES
- BIO PROCESS REVIEW TRIGGERS
- STARTING A BIO REVIEW
- TUTORIALS FOR PRS
- PRS WORKFLOWS
- HANDOUTS, CODE INTERPRETATIONS AND OTHER DOCUMENTS

Website:

[Building Inspection Office | Environment Safety & Health](#)

The screenshot shows the SLAC National Accelerator Laboratory's Environment Safety & Health (ES&H) website. The main heading is "Building Inspection Office". The page is organized into several sections:

- BIO Documents:** These files are publicly available. Includes "BIO: Project Review and Authorization Manual [pdf] January 2025" and "3/11/24 - BIO Plan Review Process Changes [pdf] May 2024".
- Administration:** Includes "Adopted Codes Tables [pdf] February 2024", "BIO/Fire Inspection Flow Chart [pdf] March 2022", "BIO/FMO Inspection Request Procedures [pdf] March 2022", "BIO Review Flow Chart [pdf]", "BIO Process Review Process Triggers [pdf] (part of the ESH Threshold Review Form, listed separately here) January 2025", and "BIO SME Matrix Table [pdf] March 2024".
- Programs (ESH Manual):** Includes "Fire and Life Safety (Chapter 12)", "General Policy and Responsibilities (Chapter 1)", and "Subcontractor Safety (Chapter 22)".
- Internal SLAC files:** These files are internal to the SLAC site and require a log-in. Includes "Accessibility", "Building", "Electrical", "Fire - FMO", "Inspections", "Mechanical", "Parking", "Plan Check", "Plumbing", "Pressure Testing", "PRS System", "SA of EE", "Science", "Structural", and "Other".
- Handouts, Code Interpretations, and Other Documents:** Includes "BIO Team Working Site" (restricted access).

A red arrow points to the "BIO Documents" section.

Project Review and Authorization Manual 2025

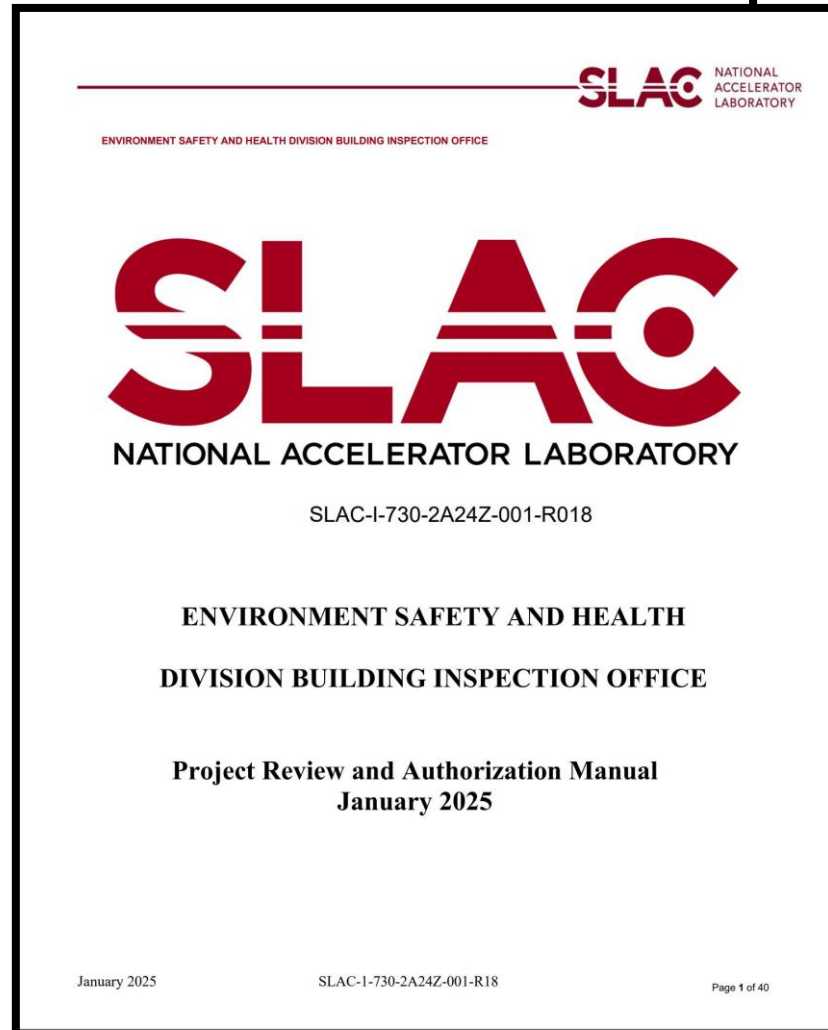


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- 2.2 Functions of Building Inspection Office (BIO)
- 2.3 ESH Subject Matter Expert (SME) Reviews

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4. Administration

Administrative requirement sections 101 through 115, adapted from CBC Chapter 1 format

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- 5.1 Project Authorization Requirements
- 5.2 Submittal Requirements
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Appendices

- A. Definitions and Acronyms
- B. BIO Authorization Stamps
- C. BIO Staff R2A2

January 2025

SLAC-I-730-2A24Z-001-R18

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Website location:

[REVISION 18, JANUARY 2025](#)

2025 Changes to RAM

Publication Data

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Document Number: SLAC-I-730-2A24Z-001-R018

Revision Information

BIO Review and Authorization Manual				
Changes and Locations in Manual				
See BIO Website for Review and Authorization Manual Full Revision History				
Rev #	Date	Name	Description of Revision	Page
18	5/20/2024	M. Matthews	Section 2.3 Added BIO/ESH Review	6
18	5/20/2024	M. Matthews	Added BIO Energy Review to Matrix table	6
18	5/20/2024	M. Matthews	Updated Reviewer matrix in EP. Deleted note 13 regarding sustainability	6 & 7
18	12/20/24	M. Matthews	Updated Reviewers List, Update Revision Date,	6, 7
18	5/20/2024	M. Matthews	Table 2 Updated Codes of Record	8
18	11/8/24	M. Matthews	Added Section 3.1.1 Codes of Record	9
18	5/20/2024	M. Matthews	Renumbered Sections 4.101.6, 4.101.4.7, 4.7.1, 4.7.2, 4.7.3	10
18	5/20/2024	M. Matthews	Renumbered 4.104.11, 4.104.11.1, 4.104.11.3, 4.104.11.4	12
18	11/11/24	M. Matthews / C. Nadler	Revised document procedure added to 4.104.7 Clarified legal status of documents and who can change documents.	12
18	5/20/2024	M. Matthews	Added 4.101.11.2 - Exemption	12
18	5/20/2024	M. Matthews	Added 4.108.5 Trailer, Conex, Conex with office Added 4.108.6 See BIO Website for other plan check handouts	13
18	9/10/24	M. Matthews	Added - SLAC owned or rental generators used for maintenance of electrical equipment not exceeding 30 days. All other uses requires BIO review and approval.	15
18	9/10/24	M. Matthews	Like for Like Replacement: Changed from \$500 to \$1000	15

18	9/10/24	M. Matthews	Added Exception: Generators owned by SLAC Facilities used or maintenance activities do not require BIO Review unless exceeding 30 days	16
18	6/26/24	M. Matthews	Added 5.1.2.1 Revision to BIO process - to code compliance only	16, 17
18	11/7/24	M. Matthews	Deleted references to Experimental	16-20
18	6/26/24	M. Matthews	Added Section 5.2.1.1 Review for Code Compliance	16
18	6/26/24	M. Matthews	Added 5.2.1.4 Project Submittal Information Form	19
18	6/26/24	M. Matthews	5.2.2.2 Changed Wording - will be Rejected	20
18	6/26/24	M. Matthews	5.2.2.3 Added With The Trigger matrix	20
18	6/26/24	M. Matthews	5.2.2.5 Changed last two sentences for clarification	21
18	6/26/24	M. Matthews	Added 5.2.2.6 BIO Stamp Approvers	21
18	8/12/24	M. Matthews	Renumbered 5.2.2.7	21
18	8/12/24	M. Matthews	Rewrite Section 5.2.3.10, 5.2.3.11, 5.2.3.12	22
18	8/12/24	M. Matthews	Renumbered section 5.2.4 - Added Bullet items	22
18	8/12/24	M. Matthews	Updated 5.2.4.3.1 Added 5.2.4.3.2 All Other Shop Drawings	23
18	8/12/24	M. Matthews	Rewrite 5.2.4.9 relating to Accessibility plan submission information, adding ADA handout to information	24 & 25
18	8/12/24	M. Matthews	Added 5.2.6.1 Scope of Work	26
18	8/12/24	M. Matthews	Reworded 5.2.10.1 Redline drawings	27, 28
18	8/12/24	M. Matthews	Added 5.3.4.7 Final Reports / Letters	29
18	8/12/24	M. Matthews	Reworded "Reviewer" Definition	36
18	8/12/24	M. Matthews	Rewrite of Appendix B BIO Stamps - Added two, retained one, Eliminated Remaining BIO types	38
18	10/1/24	M. Matthews	Added Definitions for Conventional and Experimental	36, 37

Plan updates are to be communicated and/or distributed to the following, where relevant:

- ESH Website
- ESH Building Inspection Office Reviewers
- ESH Other Department Reviewers
- F&O DCS
- F&O Strategic Capital Planning
- SLAC ESH Coordinators
- SLAC Procurement
- Other Directorate Project Managers

Design Review Change

It's BIO Responsibility to:

- Review and confirm for code and safety compliance of submitted design/drawing packages at various maturity levels (ex. 30%, 60%, 90%, 100% and “Set for Construction”)
- Inspect and confirm “as built” matches BIO Approved design/drawing packages
- Archive BIO Approved design/drawing packages as per California requirement.

3/11/24 - BIO Plan Review Process Change

As of Monday, March 11, 2024, BIO was directed to revise their Project Review and Authorization Manual by SLAC Management. This has caused changes to the applicable BIO Building Codes and Standards and ESH Program Requirements review processes, (aka BIO/ESH Review).

Project Managers, Design Managers, Experimental, and Others - Responsibilities

As of the above date PM, DM, Experimental, and Others will perform design review, provide correct level of design maturity at various stages of projects, provide package readiness for procurement, fabrication or construction with appropriate project stakeholders prior to submittal of a project to PRS for BIO/ESH review.

These aspects list NON-ESH reviewers but is not inclusive. Moving forward, these NON-SMEs will not be selected by BIO as project reviewers. Process Piping, Building/ Area Manager, F&O Electrical, F&O Architectural, F&O Instrument Control, F&O Design and Construction, F&O Mechanical Engineering, F&O Civil & Structural Engineering, PPS, Laser Safety, Clean Room, HVAC Steward, Water Steward, Sewer/Storm Steward, Sustainability, etc.

PM, DM, Experimental, Others are responsible to ensure the plans, specifications, scope or description of work complies with the Conduct of Engineering, Conduct of Project Management and the Conduct of Engineer document #DOC_000002883 for Teamcenter / Seda drawings and are properly marked on the plans.

BIO will not perform design review and will not manage project design review in PRS.

Submittal to BIO indicates the Project Manager has completed the above process and is ready for BIO review.

ESH Coordinators – ESH Chapter 1 Project Review Procedure requires the ESH Coordinator to assist the experimentalist navigate the project review process.

Building Inspection Office and ESH Program - Responsibilities

BIO will select ESH SME reviewers for the project submittal.

ESH SMEs will only review for compliance with applicable building code and standards and, ESH program requirements.

BIO / ESH is responsible to review and confirm for Building Code and Standards, and ESH Program Requirements compliance of submitted design/drawing packages at various maturity levels (ex.: 30%, 60%, 90%, 100%, and “Issued for Construction”).

BIO to inspect and confirm construction shows compliance to the BIO Approved for Code Compliance design/drawing package. As-Built & changes shall be supplied to BIO for inclusion in package.

ESH Coordinators are now required on all BIO reviews to confirm they have worked with their project.

Design Review Change

It's Project Managers Responsibility to ensure:

- Appropriate Design reviews have been completed by external stakeholders (Non-ESH) Prior to BIO submission
- Correct level of design maturity at various stages of projects
- Package readiness for procurement or fabrication.

PLEASE NOTE: BIO SME's are welcomed to provide optional comments on design or contractability and/or operational improvements that the project PM/DM will consider and are not required to implement.

BIO Plan Review System
BUILDING INSPECTION OFFICE | Project Safety Department
SLAC ESH Division

SLAC National Accelerator Laboratory
Building Inspection Office
2575 Sand Hill Road
Building 41 Room 1016
Menlo Park, Ca. 94025

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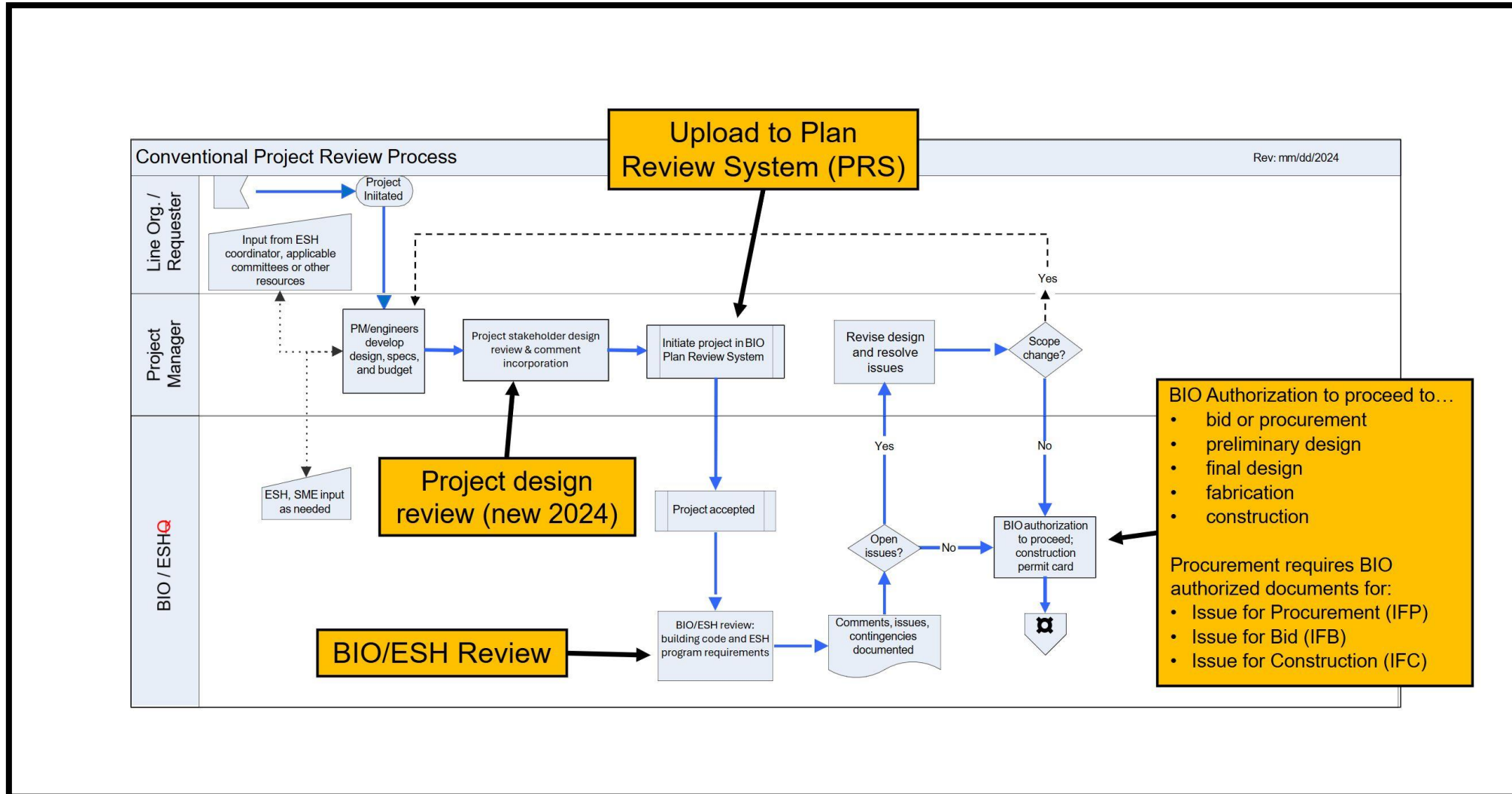
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ESH Coordinators are now required on all BIO reviews to confirm they have worked with their project.

Design Review Change Flow Chart



BIO SUBMITTAL REQUIREMENTS 5.2.1 TO 5.2.11

Key topics

- Include Charge Number with every submission
- Project submittal process
- Obtaining Authorization
- Special topics
- Construction design document requirements
- Specific plan submittal information requirements
- Accessibility submittal requirements
- SOW approvals
- Deferred Submittals
- Deviations from approved Construction documents

BIO SUBMITTAL REQUIREMENTS

5.2.1 Charge Number. The requester shall provide the Building Inspection Office with a direct bill charge number prior to the commencement of a BIO plan review. Upon request by the PM, the Building Code Official will provide a cost estimate for ESH SME effort prior to starting any work. This estimate will include input from SME's performing the review. As a general guideline, cost estimates equal or greater than 100 labor-hours will be in the form of a spreadsheet. This cost estimate DOES NOT cover the cost of NON-ESH SME reviewers. The project is responsible for obtaining those estimates.

Single vs multiple building submittals. When submitting PRS projects the number of PRS project submittals shall be based on the descriptions below.

5.2.1.1 Stand Alone Buildings. This type of buildings contain only 1 building number. IE 41, 53, 660, etc. One submittal for each building.

5.2.1.2 Single Structure with Multiple Building Numbers. This type of building contain two or more building numbers in a single building i.e., 750 & 751. One Submittal for each set of building numbers.

5.2.1.3 One Continuous Building. This type of building include Bldg. 1 & 2 - Sector 0 to 30. It does not include BSY to B999 as they have separate building numbers even though they are connected. This submittal could be one submittal or broken down into multiple submittals.

This requirement is separate from the Procurement process and projects must work with Procurement on any financial documents.

5.2.2. PRS Project Submittal Process.

5.2.2.1 Entering a Project into PRS. Documents are required to be submitted to the Building Inspection Office if the project meets the threshold criteria described in Appendix A, Reference Link 1, "BIO Review Process Triggers." The PM is responsible for submittal of all design documents, statement of special inspection requirements, and other pertinent information into the ESH BIO PRS. Where special conditions exist, BIO is authorized to require additional and/or supplemental construction documents to be prepared. For guidance on submitting requests for code and standards alternatives such as equivalencies or AMMRs, please contact BIO.

To enter a project into PRS, the PM will provide basic information and upload relevant documents in PRS. A new project will be created in "draft" status. The statement of work entry must provide a general description of the project in sufficient detail to include all of the major elements and systems of the experiment/project. This statement of work should also include any significant hazards associated with the experiment/project (examples are radiation, laser, pressure, cryogenic, and hazardous materials). Provide supporting documentation as applicable, including drawings and specifications, equipment layout, cut sheets, etc. If available, include projected starting and ending dates for each phase of the project/experiment.

5.2.2.2 Proceeding to Submitted Status. Once the submittal draft is complete, PRS notifies the Area / Building Manager and Requestor's Department Head for necessary (electronic) design package internal review and approval. When these approvals are completed, this confirms that the package represents a complete submittal and shifts status from DRAFT to SUBMITTED. If the submittal is incomplete the coordinator contacts the PM/project Point of Contact (POC) and requests missing documents or approvals. Incomplete submittals will be rejected until necessary documents are received. Uploading all necessary or requested documents is the responsibility of the project PM or PM designee.

5.2.2.3 Completing the BIO Review Process. The package, once verified complete, is processed by the coordinator. BIO compliance reviewers and other technical SME reviewers are assigned by the coordinator in consultation with the BIO Triggers list, and the submittal advances to IN REVIEW status. The change to IN REVIEW status generates a unique project number for the review that includes both a two-digit year designator and a three-digit sequential project designator (for example, #20-172 for the 172nd project released for review in 2020). PRS sends an email from BIO-admin@slac.stanford.edu to all selected reviewers, requesting comment by

will be granted.
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entered in the PRS. PMs
SMEs are expected to
response in PRS.

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Appendix B.

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APPENDIX B – BIO STAMPS

Appendix B – BIO Stamps

BIO uses electronic stamps to signify authorization of approved design documents and for other purposes. The following entries show each stamp currently in use and explains its purpose.

Authorized for Construction (IFC) This stamp marks design documents that have been reviewed for code compliance and authorization for construction can occur based on the designs. Each sheet of a drawing is stamped. Scope of work, specifications, calculations and reports are typically only stamped on their covers.

SLAC BUILDING INSPECTION OFFICE	
CONSTRUCTION AUTHORIZATION (IFC)	
By: _____	
DATE: _____	PRS #: _____
Revised Authorization <input type="checkbox"/> No <input type="checkbox"/> Yes	
These plans have been reviewed for compliance with applicable building codes and standards, and ESH program requirements.	
The authorization of these plans shall not be construed to be a permit or an approval for violation of any applicable codes, standards, or ESH programs.	
THESE PLANS SHALL BE KEPT ON THE JOB SITE FOR ALL CONSTRUCTION INSPECTIONS.	

Reviewed for Code Compliance – Review of Documents This stamp is used for multiple purposes based on the type of submittal received. This stamp is for all reviews **except** Construction Authorization (IFC). Usage includes:

- CDR Conceptual Design Report
- PDR Preliminary Design Report
- FDR Final Design Report
- Issue for BID
- Issue for Procurement
- Design stages (as determined by the PM): 30%, 50%, 60%, 75%, 90%, 100%
- Fabrication drawings
- Architect Supplemental Information (ASI)
- Requests for Information (RFI)

SLAC BUILDING INSPECTION OFFICE	
Reviewed for compliance with applicable building codes and standards, and ESH program requirements.	
BY: _____	
DATE: _____	PRS#: _____
<input checked="" type="checkbox"/> APPROVED	<input type="checkbox"/> REJECTED
DRAWING SET: _____	
REVISION #: _____	RFI #: N/A
SUBMITTAL #: N/A	
OTHER #: N/A	

Special Note: Project Management Approval Stamps – These are NOT BIO Approved Stamps.

In most contracted project designs, there are several submittals that are stamped by the PM or their designee for their internal approval process. Some documents going through this internal review process may also require a BIO review; many do not. These stamps are unrelated to BIO approvals. When BIO approval is required, the project management approval stamp does not stand in for that requirement. Examples of such project management stamps are shown below, for information only.

Example of Facilities and Operations and Design and Construction internal review stamps.

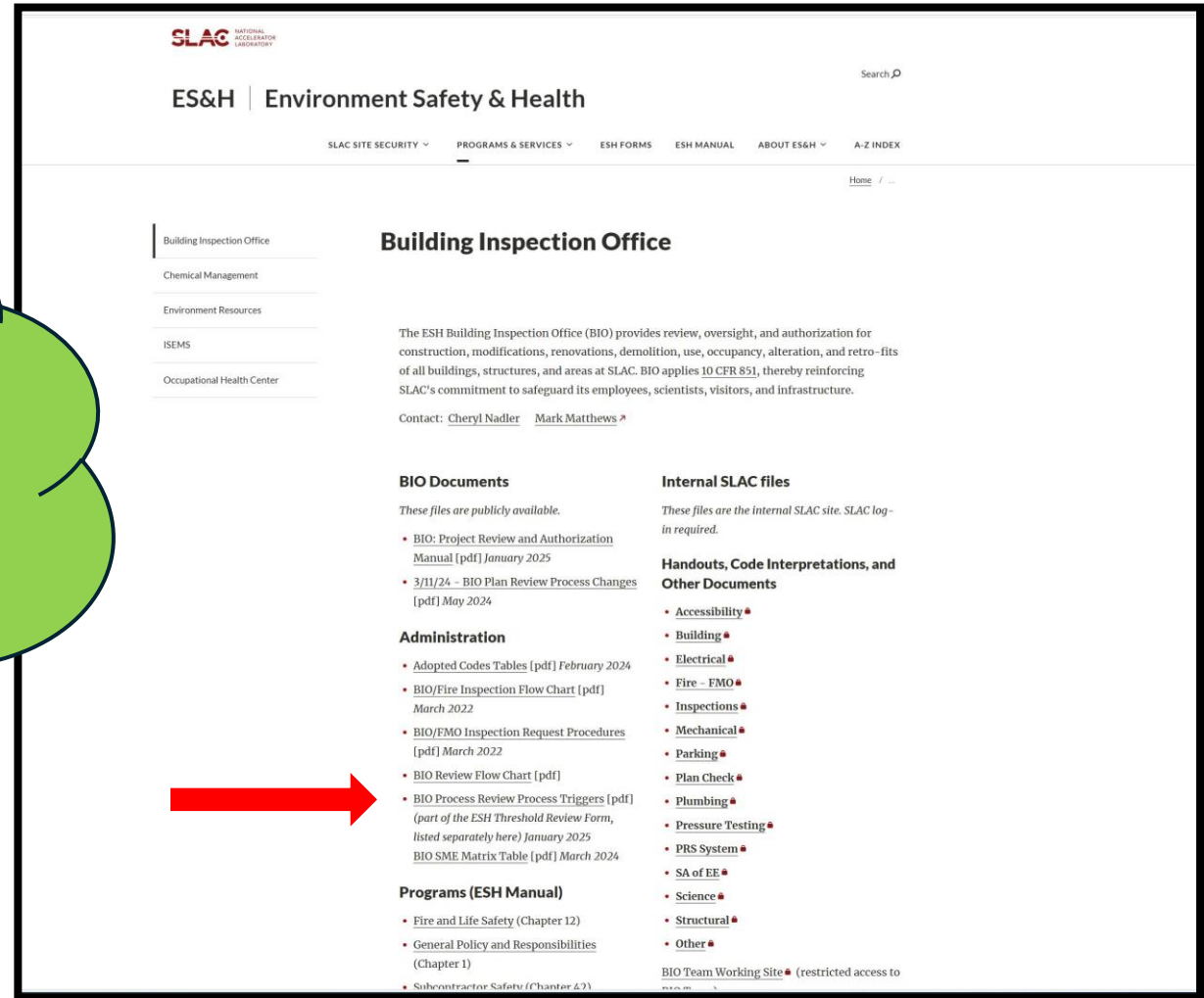
THESE ARE NOT BIO APPROVED STAMPS.

SLAC U.S. DEPARTMENT OF ENERGY	
Facilities and Operations	
<input type="checkbox"/> APPROVED	
<input type="checkbox"/> APPROVED AS NOTED	
<input checked="" type="checkbox"/> REVISE AND RESUBMIT	
<input type="checkbox"/> REJECTED	
<input type="checkbox"/> FOR INFORMATION ONLY	
Date: _____	
Submittal No. _____	

SLAC U.S. DEPARTMENT OF ENERGY	
Design and Construction Services	
<input type="checkbox"/> APPROVED	
<input type="checkbox"/> APPROVED AS NOTED	
<input checked="" type="checkbox"/> REVISE AND RESUBMIT	
<input type="checkbox"/> REJECTED	
<input type="checkbox"/> FOR INFORMATION ONLY	
Date: _____	
Submittal No. _____	

Review Triggers

PLEASE REMEMBER THAT BIO
CONDUCTS REVIEW FOR CODE AND
SAFETY COMPLIANCE.



SLAC NATIONAL ACCELERATOR LABORATORY

ES&H | Environment Safety & Health

SLAC SITE SECURITY | PROGRAMS & SERVICES | ESH FORMS | ESH MANUAL | ABOUT ES&H | A-Z INDEX

Home / ...

Building Inspection Office

Chemical Management

Environment Resources

ISEMS

Occupational Health Center

Building Inspection Office

The ESH Building Inspection Office (BIO) provides review, oversight, and authorization for construction, modifications, renovations, demolition, use, occupancy, alteration, and retro-fits of all buildings, structures, and areas at SLAC. BIO applies 10 CFR 851, thereby reinforcing SLAC's commitment to safeguard its employees, scientists, visitors, and infrastructure.

Contact: [Cheryl Nadler](#) [Mark Matthews](#)

BIO Documents

These files are publicly available.

- [BIO: Project Review and Authorization Manual \[pdf\] January 2025](#)
- [3/11/24 - BIO Plan Review Process Changes \[pdf\] May 2024](#)

Administration

- [Adopted Codes Tables \[pdf\] February 2024](#)
- [BIO/Fire Inspection Flow Chart \[pdf\] March 2022](#)
- [BIO/FMO Inspection Request Procedures \[pdf\] March 2022](#)
- [BIO Review Flow Chart \[pdf\]](#)
- [BIO Process Review Process Triggers \[pdf\] \(part of the ESH Threshold Review Form, listed separately here\) January 2025](#)
- [BIO SME Matrix Table \[pdf\] March 2024](#)

Programs (ESH Manual)

- [Fire and Life Safety \(Chapter 12\)](#)
- [General Policy and Responsibilities \(Chapter 1\)](#)
- [Subcontractor Safety \(Chapter L2\)](#)

Internal SLAC files

These files are the internal SLAC site. SLAC login required.

Handouts, Code Interpretations, and Other Documents

- [Accessibility](#)
- [Building](#)
- [Electrical](#)
- [Fire - FMO](#)
- [Inspections](#)
- [Mechanical](#)
- [Parking](#)
- [Plan Check](#)
- [Plumbing](#)
- [Pressure Testing](#)
- [PRS System](#)
- [SA of EE](#)
- [Science](#)
- [Structural](#)
- [Other](#)

BIO Team Working Site (restricted access to ...)

Q&A with Mark Matthews